

**2002**

**Northwest Geographic  
Area  
Fire Weather  
Operating Plan**

**Seattle**

**Spokane**

**Portland**

**Pendleton**

**Medford**

**Boise**



## **NOTE TO USERS:**

This copy of the 2002 NWS Annual Fire Weather Operating Plan contains the latest available maps of the fire weather zone boundaries for the Northwest Geographic Area. Fire weather zone boundaries underwent some changes that were approved by the Pacific Northwest Wildfire Coordinating Group early in 2002. GIS maps that depict the changes are still under development but the maps contained in this document are quite close to what the final versions will look like. In addition, technical problems related to properly locating NFDRS sites on these maps have not been completely solved. When zone boundaries are finalized and NFDRS site maps become available for publication this operating plan will be formatted to include them and promptly re-issued.



**2002**

**Seattle Fire Weather**

**Office Plan**

National Weather Service  
7600 Sand Point Way N.E.  
Seattle, Washington 98115

# Seattle Fire Weather

## NEW IN 2002

Modernized fire weather zone boundaries, proposed in 1997 and approved by the Weather Working Team of the Pacific Northwest Wildfire Coordinating Group, will take effect in 2002.

The National Weather Service office in Portland will assume forecast responsibility for zone 649 in Pacific county and the southern half of zone 651 in Pacific and Wahkiakum counties. These areas are now part of Portland's fire weather zone 601.

Portland also assumes forecast responsibility for the southern portion of zone 655 located in Cowlitz county. This area becomes the northern portion of Portland's fire weather zone 602.

In 2002, the National Weather Service office in Seattle Fire Weather acquires forecast responsibility for all lands managed by the North Cascades National Park. This area will now include forested land east of the Cascade crest in Chelan county, including the Lake Chelan National Recreational Area and the North Cascades National Park South Unit. Park Service land in Chelan county will be included in the new fire weather zone 662.

Another change in the 2002 fire season will be the division of the Olympic Mountains into two separate zones. Zone 652 will encompass the wetter, western side of the mountains that experience a greater influence of marine air. The drier eastern side of the mountains will become fire weather zone 661, which exhibits warmer and drier weather, higher fire danger, and more lightning activity than does the west side.

A map showing the new fire weather zone boundaries can be found with the detailed descriptions of the zone boundaries near the end of this operating plan.

## Location

The National Weather Service Forecast Office in Seattle is located at the NOAA Western Regional Center in northeast Seattle.

## Hours

The National Weather Service Office in Seattle is open 24 hours a day. The fire weather desk will be staffed by an experienced fire weather forecaster between the hours of 7:00 a.m. and 5:00 p.m. daily during the fire season - normally June through October in Western Washington. Forecast service during the off-season will be provided by staff meteorologists. Forecast service during the "off-season" will be available Monday-Friday. Phone briefings will be available on a 24/7 basis from November through May. Requests for spot forecasts or phone briefings after hours will be handled by staff meteorologists trained in the fire weather forecasting. The exact date for the switch from a weekdays only to a seven-days-a-week operation varies each year based on spring weather conditions and user requirements. Changing from the "off-season" level of service to the "fire-season" level of service will be made upon user request.

## Phone Numbers

- **Fire Weather Desk**                      **see regional mob guide**
- Jim Prange, Focal Point                      see regional mob guide
- Maggie Querciagrossa                      see regional mob guide
- FAX    see regional mob guide

### **Other National Weather Services Offices**

- Portland                                      see regional mob guide
- Spokane                                      see regional mob guide
- Pendleton                                      see regional mob guide

## E-Mail

jim.prange@noaa.gov

maggie.querciagrossa@noaa.gov

## Internet

Our Internet home page can be found at :

**<http://www.wrh.noaa.gov/Seattle>**

Click the fire weather link on the main menu to access fire weather products.

Statewide, Internet-based, fire weather briefings will be conducted Monday through Friday at 9:30 a.m. during the fire season. Contact this office for the appropriate telephone number and conference ID to participate in the conference calls.

Requested for spot forecasts can be made via our Internet web site at <http://www.wrh.noaa.gov/Seattle>. Completed forecasts will be posted to the web server within half an hour of the original request. This provides a “one-stop-shopping” method for requesting and obtaining spot forecasts. The Internet web site is the preferred format for requesting Spot Forecasts.

## Forecast District

The Seattle Fire Weather Office has forecast responsibility for most state and federal land in Western Washington. Forecast service for the Gifford Pinchot National Forest south of a line from Mt. St. Helens to Mt. Adams to the Oregon border, is handled by the Portland Fire Weather Office. The Seattle fire weather district is divided into 5 distinct districts for fire weather forecasting. The area is further divided into 13 separate fire weather zones. Each fire weather zone is comprised of at least 3 fire weather stations that exhibit similar weather and/or weather changes. However, not all of the stations report on a regular basis.

## Forecast Products

### **PRESUPPRESSION AND LAND MANAGEMENT FORECASTS**

Routine land management forecasts are issued to federal land management agencies during the “off season” from mid-October to mid-June. Land management forecasts are available in WIMS or on the Internet Monday through Friday at 9:00 a.m. During the “fire season”, twice-daily, presuppression forecasts are issued at 8:30 a.m. and 3:30 p.m. NFDRS zone trend forecasts will be issued with the afternoon presuppression forecast during the fire season.

### **FIRE WEATHER WATCHES AND RED FLAG WARNINGS**

General information about Fire Weather Watches and Red Flag Warnings is included in the main portion of this operating plan.

Fire Weather Watches and Red Flag Warnings will be issued when the Energy Release Component, as described by the National Fire Danger Rating System, is equal to or above the 90<sup>th</sup> percentile value in the frequency distribution of historical ERCs, and the following conditions described below are either occurring or forecast to occur within the next 72 hours. The table below shows the 90<sup>th</sup> percentile ERC values that will be used for each fire weather zone.

	<b><u>90<sup>th</sup> Percentile ERC</u></b>
Zone 649:	<b>17</b>
Zone 650,651,653,656, 657	<b>25</b>
Zone 652,654,655,658,659	<b>31</b>
Zone 661	<b>34</b>
Zone 662	<b>57</b>

**• Strong East Winds and Low Humidity**  
(Westside zones only)

**Nighttime hours (midnight to 7 am):**

Duration: *5 hours*

Wind Speed: *20 ft /10 minute average wind greater than or equal to 10 mph*

RH: *less than or equal to 35%*

**Daytime hours (7 am to midnight):**

Duration: *4 hours in an 8 hour block*

Wind Speed: *20 ft/10 min average wind greater than 10 mph*

RH: *less than or equal to 30%, except less than or equal to 25% on the Gifford-Pincho NF south of the Cowlitz River.*

**• Strong Westerly Winds and Low Humidity**  
(Eastside zone 662)

Duration: *at least 4 hours*

Wind Speed: *20 ft /10 minute average wind greater than or equal to 15 mph*

RH: *less than or equal to 25%.*

Stehekin and Camp Four RAWS will be used to verify Red Flag Warnings in zone 662.

The conditions described above should be fairly widespread in both time and space across the fire weather zone - as opposed to an isolated incident or a diurnal occurrence that lasts for only a few hours.

**Note:** Since many fire weather stations in Western Washington do not show good exposure to strong east winds, a Red Flag Warnings during east wind episodes will verify if the above-mentioned wind criteria is reported by at least 3 of the following stations: Ellis Mt., Minot Peak, Greenwater, Lester, Stampede Pass, or Kosmos Mountain. Historical fire weather records indicate these sites are key indicators of strong east winds and low relative humidities.

## • Lightning

Dry lightning (LAL 6) occurs when the environment below the cloud base is so dry that passing thunderstorms produce little or no precipitation at the surface. A Fire Weather Watch or Red Flag Warning will be issued for this event when the zone-averaged ERC is in the 90<sup>th</sup> percentile and dry-lightning is either expected or already occurring. The activity must be more than isolated within a particular zone, and fewer than two stations in the zone report 0.25" of rainfall from the passing thunderstorms on the west side of the Cascades and 0.20" in zone 662 on the east side of the Cascades. A Watch or Warning will also be issued for the occurrence of lightning, either wet or dry, after an extended dry spell.

**Each potential Red Flag event will be coordinated with local land management agencies to ensure environmental conditions are sufficiently critical to justify the issuance of a watch or warning.**

## TRANSPORT AND STABILITY FORECASTS

Transport and stability forecasts will be appended to every presuppression and land management forecast issued by Seattle. These forecasts include information on air mass stability, afternoon mixing heights of surface-based air, and free air winds from 3,000 feet to 7,000 feet.

## SPOT FORECASTS

Spot forecasts are available year-round to all Federal, State and Local government entities for wildfire suppression, prescribed burns (for hazardous fuel reduction), search and rescue missions, hazmat incidents, or for any other land management activity that directly supports federal resources or the safety of civilians and forest workers. Spot forecasts cannot be provided to Local and State governments for non-fire/range management activities such as spray projects, road building, tree planting, recreational events, and prescribed burns (other than for hazardous fuel reduction) that do not have the potential to escape and threaten life and property.

Information required by the fire weather forecaster from the requesting agency is found on WS Form D-1, items 1-12. Spot forecasts for wildfire suppression will take precedence over normal, office routines.

## Agencies Served

The Seattle Fire Weather Office serves the following state and federal land management agencies:

**United States Forest Service** - Olympic National Forest, Mt. Baker-Snoqualmie National Forest ,Gifford-Pinchot National Forest

**National Park Service** - North Cascades National Park, Olympic National Park, Mt. Rainier National Park, San Juan Islands National Park

**Bureau of Indian Affairs** - Olympic Peninsula Agency, Puget Sound Agency

**Washington Department of Natural Resources** - Resource Protection Division, Northwest, Olympic, South Puget Sound, and Central regions.

## **SEATTLE FIRE WEATHER ZONE BOUNDARY DESCRIPTIONS**

A detailed map of the fire weather zone boundaries is included at the end of this section.

**Zone 649:** The western boundary of fire weather zone 649 is the Pacific coastline in Clallam, Jefferson, and Grays Harbor counties. The eastern boundary includes all Federal, State and private land within 5 miles of the Pacific coastline in Clallam, Jefferson, and Grays Harbor Counties. It extends south along the eastern border of the Makah Indian Reservation and the east shore of Ozette Lake to the town of Quillayute in Clallam County. In Jefferson County, the eastern boundary crosses US Highway 101 approximately 5 miles east of the Hoh Indian Reservation, then parallels the coast south until crossing US Highway 101 again along the border between Jefferson and Grays Harbor counties 5 miles inland from the coast. The eastern border continues south in Grays Harbor county until it crosses highway 101 at New London and US Highway 12 approximately 5 miles east of Aberdeen. The boundary then turns south, following US Highway 101 to the southern border of Grays Harbor county.

**Zone 650:** Zone 650 includes all State, Federal and private land 5 miles inland from the coast to an elevation of 1500 ft on the western side of the Olympic Mountains in Clallam, Jefferson, and Grays Harbor Counties. The area includes the low elevation portion of the Calawah, Bogachiel, Hoh, Clearwater, Queets, Quinault, and the Humptulips River drainages below 1500 ft. The southern boundary begins where the Humptulips River crosses the southern boundary of Zone 652, stretching southwest along the Humtuplps River until it intersects the eastern boundary of zone 649 in Grays Harbor County.

**Zone 651:** The western boundary of zone 651 follows the Humptulips River and the eastern boundary of zone 649 in Grays Harbor County. The 1,500 foot contour interval on the south side of the Olympic Mountains forms the northern border of zone 651. The county line between Grays Harbor County and Pacific County forms the southern boundary. The eastern border follows the West Fork of the Satsop River south across US Highway 12 near the town of Satsop, continuing south along the west side of the Lower Chehalis State Forest. Zone 651 is mostly State and Private land, but also includes Forest Service land below 1500 ft in the Humtuplps and Wynochee River drainages.

**Zone 652:** Zone 652 includes US Forest Service, National Park Service, and Washington State lands at or above 1500 feet located in the western half of Clallam and Jefferson counties, and the far northeast corner of Grays Harbor county. The area includes the Pacific Ranger District office on the west and southwest side of the Olympic National Forest. Zone 652 is the wetter, west side of the Olympic Peninsula that reflects a greater influence of marine air in both weather and fire danger. The area includes all private, federal and state lands at or above 1,500 feet drained by the Calawa, Sitkum, Bogachiel, Hoh, Clearwater, Queets, Quinault, and Humptulips rivers in Clallam, Jefferson, and Grays Harbor counties.

**Zone 661:** Zone 661 is the newly-formed zone that includes private, federal and state land at or above 1,500 feet on the east side of the Olympic Peninsula. The area typically exhibits higher fire danger than zone 652, due to less rainfall, less influence of marine air, and a higher occurrence of lightning activity. The area includes lands at or above 1,500 feet drained by the Wynochee, Satsop, North and South Fork Skokomish, Hamma Hamma, Duckabush, Dosewallips, Quilcene, Dungeness, and the Elwha rivers.

**Zone 653:** Zone 653 includes all lands below 1500 ft msl on the north side of the Olympic Peninsula from the town of Sekiu on the west to a point just south of Discovery Bay on the east. The boundary extends southeast across Admiralty Inlet, east across the northern tip of the Kitsap Peninsula and Puget Sound to Interstate 5 along the border between King and Snohomish Counties. The eastern boundary of zone 653 parallels I-5 north through Snohomish, Skagit and Whatcom counties to the Canadian border.

**Zone 654:** Zone 654 includes lowland areas below 1,500 feet near the central and southern portion of Puget Sound and Hood Canal. The eastern boundary parallels I-5 south though King and Pierce counties, west through Olympia in Thurston County, then northwest along U.S. Highway 101 to city of Shelton. The boundary continues northwest from Shelton to the southeast corner of the Olympic National Forest in Mason County, then follows the 1500 ft contour northeast along the Hood Canal in Mason and Jefferson Counties.

**Zone 655:** The eastern border of zone 655 follows the West Fork of the Satsop River south across US Highway 12 near the town of Satsop, continuing south along the west side of the Lower Chehalis State Forest to the town of Brooklyn in northeast corner of Pacific County. From Brooklyn the boundary extends southeast to the town of Pe El in the eastern portion of Lewis County and then continues southeast to the town of Vader in Lewis County. The border then runs east along the southern border of Lewis county to the 1,500 foot contour interval along the west slopes of the Cascades. The boundary follows the contour on the north and south sides of the Cowlitz river valley. It then continues north along the 1,500 foot contour to the boundary between Thurston and Lewis Counties. The zone boundary then extends east to the intersection of Pierce, Thurston, and Lewis Counties. It then follows the Pierce/Thurston County boundary northwest to the intersection of I-5 and then west along I-5 to US Highway 101. Zone 655 then extends northwest paralleling 101 to the southeast corner of the Olympic National Forest in Mason County. The area includes the Capitol State Forest and the Lower Chehalis State Forest.

**Zone 656:** Zone 656 includes all State and Private lands in Whatcom, Skagit, and Snohomish Counties east of I-5 below an elevation of 1500 feet. This includes the following river drainages.....North, Middle and South Forks of the Nooksack River, Skagit River from town of Sedro Woolley to the town of Marblemount (including Lake Shannon and Baker Lakes in the Baker River drainage), Sauk River from the confluence of the Sauk and Skagit Rivers south along SR 530 to the town of Darrington, the Stillaguamish River from Darrington to the town of Arlington, and the Skykomish River along US Highway 2 from the town of Monroe to six miles east of the town of Skykomish.

**Zone 657:** Zone 657 includes land below 1500 ft east of I-5 in King and Pierce Counties. The southern border of the zone follows the border between Pierce and Thurston Counties. This area includes the following river valleys below 1500 ft that reach into the Cascade Mountains...North, Middle and South Fork of the Snoqualmie River, White River including Mud Mountain Lake, Puyallup River, and the Nisqually River to the town of Ashford.

**Zone 658:** Zone 658 includes Federal, State and Private lands at or above 1500 feet in Whatcom, Skagit, Snohomish, and the northeast portion of King County in the Skykomish River drainage. The area includes the North Cascades National Park and the Ross Lake National Recreational Area east of the Cascade crest,, and the Mt. Baker, Darrington, and Skykomish Ranger Districts of the Mt.Baker-Snoqualmie National Forest. The eastern boundary is the Cascade crest.

**Zone 659:** Zone 659 includes Federal, State and Private lands at or above 1500 ft in King, Pierce, and Lewis Counties, and the extreme northern portion of Skamania County. This includes the North Bend and White River Ranger Districts of the Mt. Baker-Snoqualmie National Forest, Mt. Rainier National Park, and the Cowlitz Valley Ranger District of the Gifford Pinchot National Forest. The eastern boundary of this zone runs along the crest of the Cascades.

**Zone 662:** Zone 662 includes federal lands managed by the North Cascades National Park east of the Cascade crest in Chelan county. This area includes the Lake Chelan National Recreational Area and the North Cascades National Park South Unit.

**ZONE 649**

<b>STATION</b>	<b>NFDRS#</b>	<b>AGENCY</b>	<b>TYPE</b>	<b>LAT</b>	<b>LONG</b>	<b>LEGAL</b>	<b>ASPECT</b>	<b>ELEV</b>
Quillayute	450120	DNR	Metar	48.00	124.50	S07-28N-14W	Flat	179
Hoquiam	450314	DNR	Metar	46.93	123.90	S09-17N-10W	Flat	14

**ZONE 650**

<b>STATION</b>	<b>NFDRS#</b>	<b>AGENCY</b>	<b>TYPE</b>	<b>LAT</b>	<b>LONG</b>	<b>LEGAL</b>	<b>ASPECT</b>	<b>ELEV</b>
Ellis Mt.	450130	DNR	RAWS	48.15	124.31	S25-31N-13W	Ridge	2671
Clearwater	450202	DNR	Manual	47.60	124.30	S33-26N-11W	Valley	1063
Forks	450105	DNR	Manual	47.96	124.38	S04-28N-13W	Flat	303

**ZONE 651**

<b>STATION</b>	<b>NFDRS#</b>	<b>AGENCY</b>	<b>TYPE</b>	<b>LAT</b>	<b>LONG</b>	<b>LEGAL</b>	<b>ASPECT</b>	<b>ELEV</b>
Minot Peak	450306	DNR	RAWS	46.88	123.42	S10-16N-06W	Ridge	1768

**ZONE 652**

<b>STATION</b>	<b>NFDRS#</b>	<b>AGENCY</b>	<b>TYPE</b>	<b>LAT</b>	<b>LONG</b>	<b>LEGAL</b>	<b>ASPECT</b>	<b>ELEV</b>
Tom Creek	450121	USFS	RAWS	48.02	123.92	S11-29N-10W	Ridge	2400
Owl Mt.	450211	DNR	RAWS	47.77	123.97	S11-26N-10W	Ridge	3398
Humptulips	450312	USFS	RAWS	47.37	123.47	S24-22N-09W	Ridge	2400

**ZONE 661**

<b>STATION</b>	<b>NFDRS#</b>	<b>AGENCY</b>	<b>TYPE</b>	<b>LAT</b>	<b>LONG</b>	<b>LEGAL</b>	<b>ASPECT</b>	<b>ELEV</b>
Hurricane Rdg	450124	NPS	RAWS	48.00	123.83	S36-29N-07W	Ridge	5000
Cougar	450117	USFS	RAWS	47.92	123.12	S09-28N-03W	Mid-slope	3000
Jefferson	450911	USFS	RAWS	47.55	123.68	S06-23N-04W	E/Slope	2200

**ZONE 653**

<b>STATION</b>	<b>NFDRS#</b>	<b>AGENCY</b>	<b>TYPE</b>	<b>LAT</b>	<b>LONG</b>	<b>LEGAL</b>	<b>ASPECT</b>	<b>ELEV</b>
Bellingham	451411	DNR	Metar	48.80	122.50	S10-38N-02E	Flat	150
Everett	451614	DNR	Metar	47.90	122.30	S22-28N-04E	Flat	603
Whidbey	450701	DNR	Metar	48.30	122.70	S15-33N-01E	Flat	54

Blue Mt.	450127	DNR	Manual	48.00	123.30	S34-30N-05W	SW/Slope	750
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#### ZONE 654

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
Bremerton	450801	DNR	Metar	47.50	122.60	S25-24N-01E	Flat	350
Quilcene	450207	USFS	RAWS	47.57	124.16	S24-27N-02W	Flat	50
Sea-Tac	451716	DNR	Metar	47.50	122.30	S33-23N-04E	Flat	450
Tacoma	451808	DNR	Metar	47.10	122.50	S14-18N-02E	Flat	322

#### ZONE 655

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
Olympia	451001	DNR	Metar	47.10	122.80	S11-18N-01W	Flat	200
Chehalis	451103	DNR	Metar	46.60	122.90	S15-12N-2W	Flat	245

#### ZONE 656

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
Abbotsford	451402	DNR	Metar	48.80	122.30	S31-39N-05E	Flat	200
Sedro Woolley	451507	DNR	Manual	48.50	122.20	S18-35N-05E	Valley	160
Marblemount	451504	NPS	Manual	48.54	121.44	S12-35N-10E	Valley	357
Darrington	451603	USFS	Manual	48.30	121.60	S14-32N-09E	Valley	550
Skykomish	451709	USFS	Manual	47.80	121.30	S35-26N-11E	Valley	936

#### ZONE 657

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
North Bend	451707	DNR	Manual	47.50	122.80	S10-23N-08E	Valley	480
Fire Academy	451721	USFS	RAWS	47.45	121.66		W/Midslope	1570
Enumclaw	451702	DNR	Manual	47.20	122.00	S30-20N-07E	Flat	742
Elbe	451803	DNR	Manual	46.80	122.30	S26-15N-06E	Valley	1200

**ZONE 658**

<b>STATION</b>	<b>NFDRS#</b>	<b>AGENCY</b>	<b>TYPE</b>	<b>LAT</b>	<b>LONG</b>	<b>LEGAL</b>	<b>ASPECT</b>	<b>ELEV</b>
Kidney Creek	451409	USFS	RAWS	49.00	121.90	S16-40N-07E	Midslope	3000
Hozameen	451412	NPS	Manual	48.98	121.07	S02-40N-13E	Midslope	1615
Sumas Mt	451415	DNR	RAWS	48.90	122.23	S36-40N-04E	Ridge	3201
Finney Creek	451509	USFS	RAWS	48.40	121.80	S31-34N-08E	Midslope	1900
Gold Mt.	451613	USFS	RAWS	48.20	121.50	S33-32N-10E	Midslope	3400
Johnson Rdg.	451611	USFS	RAWS	47.80	121.27	S29-27N-12E	Midslope	2000

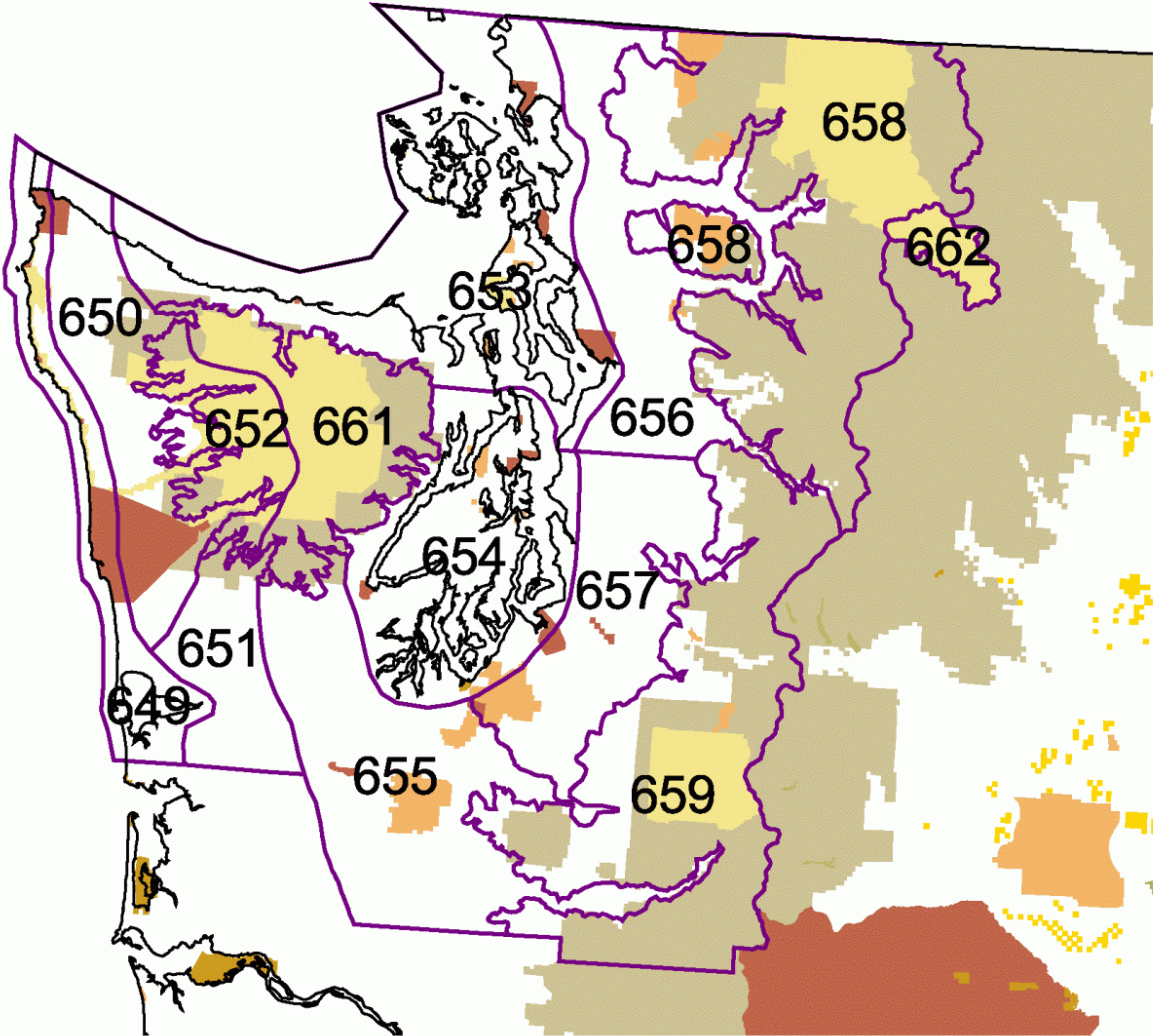
**ZONE 659**

<b>STATION</b>	<b>NFDRS#</b>	<b>AGENCY</b>	<b>TYPE</b>	<b>LAT</b>	<b>LONG</b>	<b>LEGAL</b>	<b>ASPECT</b>	<b>ELEV</b>
Stampede	451711	DNR	Metar	47.30	121.30	S25-21N-11E	Ridge	3967
Lester	451705	USFS	RAWS	47.20	121.50	S23-20N-10E	Valley	1615
Greenwater	451718	DNR	RAWS	47.10	121.60	S24-19N-09E	Midslope	2400
Kautz Creek	451812	NPS	Manual	46.90	121.90	S06-14N-08E	Valley	2326
Ohanapecosh	451119	NPS	Manual	46.73	121.57	S05-14N-10E	Valley	1900
Kosmos	451105	DNR	RAWS	46.60	122.20	S16-12N-05E	Ridge	2100
Hagar Creek	451115	USFS	RAWS	46.57	121.63	S36-13N-09E	Ridge	3600
Orr Creek	451919	USFS	RAWS	46.35	121.60	S17-10N-10E	Midslope	3000

**ZONE 662**

<b>STATION</b>	<b>NFDRS#</b>	<b>AGENCY</b>	<b>TYPE</b>	<b>LAT</b>	<b>LONG</b>	<b>LEGAL</b>	<b>ASPECT</b>	<b>ELEV</b>
Stehekin	452121	NPS	RAWS	48.34	120.72	S02-32N-17E	Valley	1230

Seattle Fire Weather Zone Map





2002  
Spokane NWS Office  
Fire Weather Annual  
Operating Plan

National Weather Service  
2601 North Rambo Rd.  
Spokane, Washington 99224--9164

# Spokane Weather Forecast Office

## Location

The Fire Weather Program is located at the National Weather Service Office in Spokane.

## Hours

Office hours will be as follows:

Early Apr. - Late June	Mon.-Fri.	8:00 a.m. - 4:00 p.m
Late June - Early Nov.	Daily	6:30 a.m. - 4:30 p.m.

## Phone Numbers

- Fire Weather see regional mob guide
- Public see regional mob guide
- FAX see regional mob guide

## Staff

<u>Name</u>	<u>Position</u>
John Livingston	Meteorologist in Charge
Gary Bennett	Fire Weather Program Leader

## Communications

All forecasts and spot forecasts are input into AWIPS (Advanced Weather Integrated Processing System), WIMS, and on Spokane's Internet home page. Users who do not have access to WIMS, or Internet can still have forecasts faxed to them.

## Internet Address

<http://www.wrh.noaa.gov/Spokane/fire.htm>

<http://www.wrh.noaa.gov/Spokane>

# Spokane Fire Weather (continued)

## Forecast District

The Spokane Weather Forecast Office has weather forecast responsibility for a large portion of protected lands in eastern Washington. Exceptions are the Blue Mountains area, the Yakama Indian Nation lands, the DOE Hanford Site, and Southeast Department of Natural Resources (DNR) land. These protected lands are now the forecast responsibility of the Pendleton Weather Forecast Office.

Spokane's area of responsibility for Eastern Washington is now divided into six (6) districts for fire weather forecasting. In addition, these forecast districts are further sub-divided into ten (10) fire weather zones. See the map for general locations of districts and zones for eastern Washington. The weather zones are comprised of fire danger stations with similar weather and similar trends in weather changes.

Spokane also, has forecast responsibility for the central and northern Idaho Panhandle. This district has one (1) zone covering the Idaho Panhandle National Forests, Idaho State Lands, and Coeur d'Alene Indian Agency lands.

## Forecast Services

### Pre-suppression Forecast

Issuance of pre-suppression forecasts are seasonal. Routine issuance of the first weekday, morning and afternoon forecasts begins sometime in the spring. Routine issuance of the morning and afternoon forecasts seven days a week normally begins in late June continuing through late October or early November. Specific start and stop dates are coordinated with user agencies. Morning forecasts will be available at 08:30 a.m., while afternoon forecasts will be available at 3:30 p.m.

### Fire Weather Watches and Red Flag Warnings

General Fire Weather Watch and Red Flag Warning criteria continues to be under review. Until formal changes have been agreed upon by the Land Management agencies and the National Weather Service we will continue with the present criteria. Red Flag criteria for eastern Washington are as follows

- Dry lightning and thunderstorms producing little or no precipitation (less than .20 of an inch).
- Any lightning and thunderstorms (wet or dry) following an extended dry period.

## Spokane Fire Weather (continued)

### Forecast Services (cont)

- Sustained surface winds exceeding a 10 minute average of 15 mph and accompanied by:
- Relative humidity of 15% or less in the Basin and <25% in the mountains and <20% in the lower valley zones. Must be verified by 2 RAWS sites.
- Any combination of low relative humidity, strong and gusty winds, and a high level Haines Index of 5 or 6.

The issuance of Red Flag Warnings will take into account fuel conditions, and will be coordinated with user agencies and other applicable weather forecast offices.

### Spot Forecasts

Official spot forecasts will be prepared and disseminated by the duty forecaster. When a request for an official spot forecast comes into the office, all forecasters at WFO Spokane are qualified to prepare, issue, and disseminate spot forecasts. Spot forecasts, therefore, may be requested at anytime, 24 hours a day.

### IMETS (Incident Meteorologists)

Spokane Fire Weather Office will have a minimum of two certified IMETS on staff with at least one available at all times during the high summer fire season.

### TRANSPORT AND STABILITY FORECASTS

Due to a mandate to control air quality in “Designated Areas” surrounding Spokane, transport and stability forecasts will be provided for the area during the fire season. Forecasts will consist of an estimate of air mass stability, mixing height, and winds aloft Bellow 7,000 feet. A forecast will be included with both the morning and afternoon pre-suppression forecasts as indicated above.

## Spokane Fire Weather (continued)

### Non- Forecast Services

There are several duties that fall into the non-forecast services including, but not limited to teaching assignments, customer meetings, customer consultations, preparation of annual reports, preparation of annual operating plans, program management, research and in-house training of personnel.

There is a need for advanced notice for teaching assignments, customer meetings and consultations. The NWS-NWSEO Collective Bargaining Agreement provides rules for scheduling of bargaining unit employees. NWS management has limitations regarding modification of the work schedule after it has become "fixed" without paying overtime.

All requests for teaching assignments, customers meetings and consultations will be honored provided they are scheduled more than three weeks ahead of time, and they do not conflict with other Fire Weather commitments. NWS Spokane will make every effort to fulfill requests for teaching assignments, customer meetings and consultations that are scheduled with less than three weeks lead time, or conflict with other Fire Weather commitments. Shifts will be scheduled to complete the Annual Operating Plan and the Annual Report. Program management, research and training time will be provided to ALL employees based on needs of the office.

**Fire Weather Program Leader** - The WFO Spokane Fire Weather Program Leader is Gary Bennett. His primary focus will be customer outreach, training, program development, IMET dispatches, and fire weather operational shifts.

**Meeting Proficiency and Currency Standards** - All forecasters will complete required proficiency prior to working alone on any real time Fire Weather products and services.

## Spokane Fire Weather (continued)

### Agencies Served

Land management agencies served by the Spokane Fire Weather Office include:

<b>USFS....</b>	Colville NF Wenatchee NF Okanogan NF Idaho Panhandle NF
<b>BLM....</b>	Spokane District
<b>BIA....</b>	Colville Indian Agency Spokane Indian Agency Coeur d' Alene Indian Agency
<b>NWR...</b>	Turnbull National Wildlife Refuge Columbia National Wildlife Refuge Priest River National Wildlife Refuge
<b>Washington DNR...</b>	Northeast Area Resource Protection Division
<b>Idaho...</b>	Department of State Lands
<b>Other Public Agencies...</b>	Coulee Dam National Recreation Area

## **Spokane Geographical Area Descriptions**

Geographical area descriptions (districts) have changed beginning this year (2002) across eastern Washington. The Spokane weather office now has forecasts responsibility for the mountains and valley areas of northern and central eastern Washington and the northern and central Idaho Panhandle. The Pendleton weather office assumes responsibility for the southern areas of eastern Washington.

The Spokane Fire Weather Office has weather forecast responsibility for the protected lands in the northern and central part of eastern Washington. Exceptions are the Blue Mountains area, the Yakama Indian Reservation, and the Southeast Department of Natural Resources (DNR) protected lands. Forecasts for these areas are now handled out of the Pendleton Weather Forecast Office (see zone descriptions below).

Eastern Washington is now divided into six districts for fire weather forecasting. In addition, these forecast districts are further sub-divided into ten fire weather zones. See the map for general locations of districts and zones for eastern Washington. The fire weather zones are comprised of fire danger stations with similar weather and similar trends in weather changes.

### **South Central District:**

This new district now consists of Zone 676 lower elevations and Zone 680 higher elevations. Zone boundaries have changed for zone 680 and valley zone 676 is a new zone. The south central district covers those areas of the southern Washington Cascades east slopes north of the Yakama Indian Reservation to Mission Ridge. The district boundary also runs west to east from the Cascade crest to Interstate 82. This includes the Naches and Cle Elum Ranger Districts of the Wenatchee National Forest. This district has pronounced climate differences, from the marine air influence near the Cascade crest, to the dry arid climate of the valleys. This district has a relatively low frequency of lightning, and averages about 10 storm-days per season from June through September.

### **Central District:**

This district has virtually no changes for 2002. District boundaries and zones remain similar to last year with only exception being the North Cascades National Park and Lake Chelan National Recreation Area east of the Cascade crest. This area is now under the Seattle forecast office. Zone 662, (a new zone) was created for that portion of the park and recreation area. Zone 677 lower elevations and Zone 682 higher elevations remain the same. This district extends from Mission Ridge north to the Sawtooth Ridge, and from the Cascade crest east to the Columbia River. It includes the northern part of the Wenatchee NF. Lightning frequency averages around 18 storm-days per season. The summer climate is similar to the South Central District, but winds tend to be stronger and more persistent, and day to day weather changes are more pronounced. This district contains some of the highest fire hazard areas in the Pacific Northwest.

## **Spokane Geographical Area Descriptions (cont)**

### **Northern District:**

A zone was added to this district for 2002, but the boundaries remain the same. The new zone is 687, which becomes the Okanogan Highland zone. Zone 684 lower elevations and zone 685 higher elevations of the North Cascades' east slopes remain the same. This district extends across the north part of eastern Washington from the Cascade crest to the Kettle River Ranger on the east. It includes the Okanogan NF, the Republic Ranger district of the Colville NF, land under the protection of Northeast Department of Natural Resources, and the western and central parts of the Colville Indian Agency. The marine influence is minimal in this district compared to the south central and central districts due to its more continental location. Winds are generally lighter than central and south central districts. Lightning activity though is greater, averaging about 35 storm-days per season.

### **Northeast District:**

No new changes to this zone for 2002. Zone 686. The northeast district extends from Kettle River to the Idaho border, and south to the vicinity of Spokane. It covers the remainder of the Colville NF and Indian Agency, as well as lands under the Northeast DNR. This district is normally more moist than the other districts since it extends into the western foothills of the Rocky Mountains. The southern portion around Spokane is the drier, windier section of this district. Lightning frequency is the greatest of any of the districts averaging 40 storm-days per season.

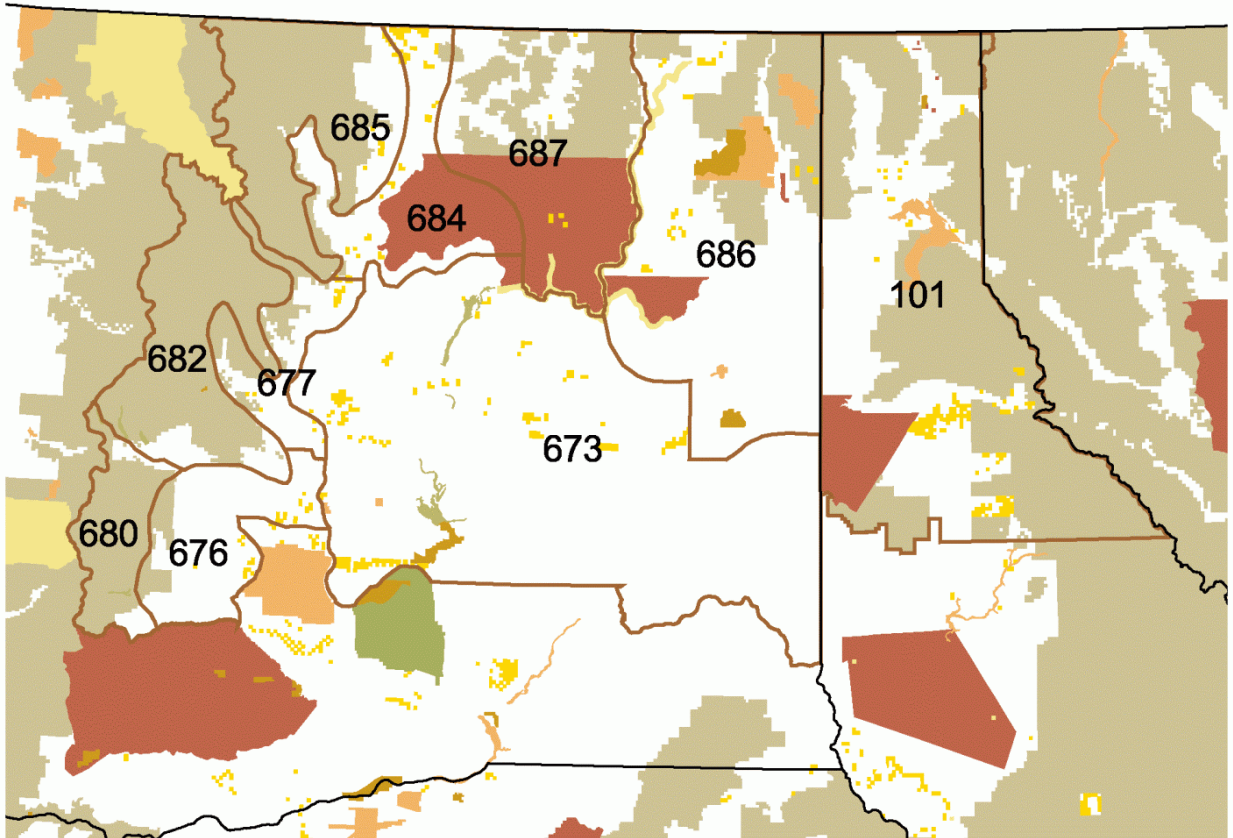
### **Northern Columbia Basin District:**

Zone 673. This district was narrowed for 2002. The Pendleton Weather Forecast Office will now have responsibility for all SE Department of Natural Resources lands, Yakama IA land, and DOE Hanford. The southern district boundary is I-90 for that part of the Yakima Firing Center in Kittitas County then follows county lines west to east across Grant, Adams, and Whitman Counties. The western part of the district boundary is the Columbia River at the Grant County line. The northern boundary is the same as previous years following the Columbia River to the eastern Ferry County then south across the northeast part of Lincoln County to I-2 near Davenport then east to the Spokane County line. Fuels in this district consist of mainly grass and sage. The district includes the Waterville Plateau which contains low ridges and coulees'. Most of the district is at fairly low elevations between 900 and 3,000 ft...with the exception being Badger Mountain near Waterville at 4,221 feet. Due to the relatively low elevations and locations, this is the warmest and driest district. Winds in some areas can be very strong. Lightning activity is the least of the districts, averaging about 6 storm-days per season.

### **Northern and Central Idaho Panhandle District:**

No change to this district for 2002. Northern and Central Idaho Panhandle Zone 101 - Northern and Central Idaho Panhandle. This zone includes...Idaho Panhandle National Forests. Coeur d'Alene Indian Agency lands, and Idaho State protected lands in the following counties: Boundary, Bonner, Kootenai, Benewah, Shoshone, and the northern part of Latah county, where a part of the St. Joe District resides. Zone 101 is broken into three (3) separate zones the Northern zone, Central zone and Southern zone. Idaho Panhandle Zone 101 - Formerly zones 101 and part of zone 102 previously handled by the Missoula Fire Weather Office.

## Spokane Fire Weather Zone Map





**2002**

**Portland Fire Weather**

**Office Plan**

National Weather Service  
5241 NE 122<sup>ND</sup> Ave.  
Portland, Oregon 97230-1089

# Portland Fire Weather

## NEW for 2002

Fire weather services from the Portland National Weather Service office remained largely unchanged from 2001. However, some fire weather zone boundaries have undergone changes that have already been approved by the Pacific Northwest Wildfire Coordinating Group. Zone reconfigurations occurred along the Oregon and Washington coasts, in the eastern end of the Columbia River Gorge and east of the Cascades. Some new zones appeared while several older zones split. Some geographic areas which were serviced by one National Weather Service office are now being serviced by a different office. Be sure to check the attached maps carefully for the new zone boundaries and numbers.

## Location

National Weather Service Forecast Office  
5241 NE 122<sup>nd</sup> Avenue  
Portland, OR 97230-1089

## Hours

The National Weather Service Office in Portland is open 24 hours a day, 7 days a week. The fire weather duty desk will be staffed with a certified fire weather forecaster between the hours of 7 am and 5 pm, 7 days a week during the fire season, normally from about Memorial Day through October. During the Spring burning season, approximately March to Memorial Day, the fire weather desk will be staffed with a fully dedicated and "fire weather certified" forecaster between the hours of 7 am and 3 pm, Monday through Friday.

## Staff

Steve Todd  
Tyree Wilde

Meteorologist in Charge  
Warning Coordination Meteorologist

Scott Weishaar  
John Saltenberger  
Dave Willson  
Ira Kosovitz  
Clinton Rockey  
Danny Mercer

Fire Weather Program Manager and IMET  
General forecaster and IMET  
Senior forecaster  
General forecaster  
General forecaster  
General forecaster

# Portland Fire Weather

## Contact

### Telephone:

Fire Weather Desk	see regional mob guide
Lead Forecaster (24 hour)	see regional mob guide
FAX	see regional mob guide

### Internet:

<http://www.wrh.noaa.gov/portland/fwx.htm>

### Email:

scott.weishaar@noaa.gov  
john.saltenberger@noaa.gov

## Forecast Services

### GENERAL FORECASTS:

- **Fire Season:** Regularly scheduled **general fire weather forecasts** are issued twice per day by “certified” fire weather forecasters during the fire season with issuance times at 09:00 PDT and 14:30 PDT.
- **Prescribed Burning Season:** Regularly scheduled **land management forecasts** will be issued by certified fire weather forecasters with issuance times at 0900 PDT and 14:30 PST.
- **Winter:** Approximately November through early March, regularly scheduled **land management forecasts** will be issued 3 times per day by the general forecast staff.

### SPOT FORECASTS

Detailed weather information beyond what is presented in the general forecast may be obtained with a **spot forecast**. Spot forecasts may be requested by a telephone call to the forecaster or through the [spot forecast request web page](#) available at the Portland fire weather web page URL listed above.

**Spot Forecasts for prescribed burning:** Spot forecast requests for prescribed fire are best initiated prior to 11 am on the planned day of the burn. Requests may also be entered into the spot forecast web page several days prior to the planned ignition. In either case, we request a weather observation be taken at the site of the burn within six hours of planned ignition and relayed to us.

**Spot Forecasts for wildfires:** Spot forecasts for wildfires may be requested at any time and will take priority over other station duties. Spot forecasts will be handled by one of the meteorologists certified in fire weather listed above. This may require that a certified fire weather forecaster be called in on overtime and the costs will be charged to the incident.

# Portland Fire Weather

## Forecast Services

(Continued)

### ***FIRE WEATHER WATCHES and RED FLAG WARNINGS***

Red Flag conditions are defined as those weather conditions which significantly elevate fire danger. Fire Weather Watches and Red Flag Warnings will be issued in accordance with Weather Service Operations Manual Chapter D-06.

Fuels must be critically dry and fire danger high before a Red Flag Warning or Fire Weather Watch is issued from the Portland office. Evaluations of fuel condition will be made in accordance with reported NFDRS values and in consultation with fire managers whenever possible. Assuming these conditions are met, Fire Weather Watches and Red Flag Warnings are usually issued for the following events:

#### **1. Combination of strong winds and low humidity**

**West of the Cascades** - Almost exclusively issued for **foehn east winds**.

##### **NIGHT HOURS** (10 pm to 7 am)

- 10 minute average RAWS wind speeds greater than 10 mph and RH less than 35% for at least 5 hours.

##### **DAY HOURS** (7am to 10 pm)

- 10 minute average wind speeds greater than 10 mph and RH less than 25% for at least 4 hours during any 8 hour period.

**East of the Cascades** - Primarily issued for winds associated with **marine pushes or dry cold fronts**.

- 10 minute average RAWS wind speeds greater than 10 mph and RH less than 20% for at least 2 hours during the day or night.

Note: The above criteria need to be met by at least 2 representative RAWS.

#### **2. Critically dry and unstable airmass (Haines Index 6 type)**

- Surface relative humidity less than 25% westside and RH less than 15% east of the Cascades and Haines Index 6 (actual or estimated).

#### **3. Dry thunderstorms**

- Lightning occurrence with area coverage scattered or greater (LAL 3) over the Red Flag area plus insignificant rainfall. Insignificant rainfall is defined as RAWS reporting less than 0.10 inches east of the Cascades and 0.25 inches west side.

# Portland Fire Weather

## Forecast Services (Continued)

### NFDRS TREND FORECASTS

A numerical **trend forecast** is prepared and disseminated to WIMS at about 16:00 PDT each afternoon during the fire season. This trend forecast is used to compute forecasted NFDRS indices valid for the following day. The number of NFDRS indices forecast by the weather office depends only on the number of NFDRS observations input into WIMS by the fire agencies. If observations are not entered into WIMS by 1500 PDT, indices will not be forecast.

### PROBABILITY FORECASTS

**Probability forecasts** are included in the afternoon general fire weather forecast. See example below. These give the daily probability that various weather events will occur on each of the next five calendar days in selected fire weather zones. Some of these events are those which could prompt the issuance of a Red Flag Warning. Formal criteria for the probability forecasts are:

- Wetting Rain: Half (or more) of the RAWS stations in the zone receive at least 0.10 inches of rain.
- Lightning: Any lightning strikes in the zone.
- Low Humidity: Half (or more) of the RAWS stations in the zone record a minimum humidity at or below the following values:

Eastside zones    **15%**  
Westside zones   **25%**

- Strong Winds: Half (or more) of the RAWS stations in the zone record a sustained 20 foot ten minute average wind speed at or above the following values:

Eastside zones   **10 mph**  
Westside zones   **15 mph**

### An example of a 5 day probability forecast:

5-day Probability Forecasts (Sunday through Thursday)

	<u>Rain &gt;.10</u>	<u>Lightning</u>	<u>Low Hum</u>	<u>Wind</u>
Coastal Zones:	00000	00000	00200	00000
Zone 660:	00000	00000	02411	00032
Zone 605/607:	00000	00000	03521	00032
Zone 606/608:	00000	00000	04632	00042
Zone 609:	00000	00000	15653	00075
Zone 610:	00000	00000	26764	00054

# Portland Fire Weather

## Other Services

### ***FIRE WEATHER INSTRUCTION and LECTURES***

An experienced fire weather forecaster will be available to help instruct the weather sections of standard fire behavior training courses offered by federal, state and local government fire agencies. This includes S-190 through S-590 and others. In addition, a forecaster will also be available for special speaking engagements when scheduling permits. Requests for an instructor or speaker should be made at least 4 weeks in advance of the intended presentation date.

### ***NORTHWEST GACC SUMMER DETAIL***

The Portland NWS office will detail an experienced fire weather forecaster to the Northwest Geographic Area Coordination Center (GACC) for 40 hours each week approximately 6 months each year. Duties will include publication of the regional fire weather operating plan, keeping GACC staff continuously advised of fire weather conditions and conducting daily “blast up” weather coordination calls. Duties also include participation in applied climate research under the direction of the regional fire weather program manager.

### ***FORECAST VERIFICATION***

The purpose of verification is to improve the quality of forecasts and warnings issued from the Portland weather office. Weather conditions are recorded and archived on a routine basis during the fire season. These observations are studied and compared against our forecasts and warnings to identify any systematic bias or consistent errors. Verification will focus on Red Flag Warnings but we will also verify individual NFDRS station forecasts for Fields RAWS and Lava Butte RAWS. Verification results will be published in the Portland Fire Weather Annual Summary.

### ***ANNUAL SUMMARY***

A summary of climatic statistics, forecast and warning verification, fire danger trends and other noteworthy fire weather events is published at the end of each year. This summary will be available on the WWW or with a paper copy on request.

### ***ANNUAL OPERATING PLAN***

An annual operating plan (this document) describing NWS office services, responsibilities, and procedures will be published each year prior to fire season. The operating plan will be published on the WWW.

### ***OTHER DUTIES***

- Maintenance of the Portland fire weather WWW page.
- Internal NWS staff proficiency training

# Portland Fire Weather

## Forecast District

### **Zone 601 - North Oregon/South Washington Coastal Strip**

Represents the south WA and north OR coastal strip including adjacent west slopes of the coast range. Includes the north portion of the Siuslaw NF and ODF and WADNR protected private land.

Extends east-west from the crest of the coast range to the Pacific Ocean. Extends north-south from the north boundary of Pacific County, WA to Oregon State Highway 22 along the eastern boundary of ODF regulated use area NW-2. The WA section of this zone represents Pacific and Wahkiakum Counties in their entirety.

### **Zone 612 - Central Oregon Coastal Strip**

Represents the central Oregon coastal strip including adjacent west slopes of the coast range. Includes southern portions of the Siuslaw NF and ODF protected private land.

Extends east-west from the crest of the coast range to the Pacific Ocean. Extends north-south from Oregon State Highway 22 to the Umpqua River along the eastern edge of the Siuslaw National Forest including ODF regulated use area SL-2.

### **Zone 602 - East Slopes of the North Oregon/South Washington Coast Range**

Represents the east slopes of the north Oregon/south Washington coast range. Mostly private land under ODF and WADNR protection.

Bounded on the west by the crest of the Coast Range along the boundary of ODF regulated use area NW-3. Bounded on the east by the western periphery of the Willamette Valley and Columbia River in Oregon and by the contour of the Willapa Hills/Coast Range in Washington. Extends north-south from the north boundary of Lewis County, WA to Oregon State Highway 22.

### **Zone 603 - East Slopes of the Central Oregon Coast Range**

Represents the east slopes of the central Oregon Coast range not including the Willamette Valley. This is comprised mainly of ODF protected private land.

Bounded on the west by the crest of the Oregon coast range at the eastern boundary of the Siuslaw National Forest. Bounded on the east by the eastern periphery of ODF regulated use areas WO-1 and WT-1 at the edge of the Willamette Valley. The north boundary is along Oregon state highway 22 where ODF regulated use areas NW-3 and WO-1 meet. The southern boundary lies along Oregon State Highway 38.

# Portland Fire Weather

## Forecast District

### **Zone 604 - Willamette Valley Including Clark County Lowlands of Washington**

Bounded on the west and east by the foothills of the Coast Range and Cascades respectively in Oregon...Columbia River and foothills of the Cascades in the Washington portion. Extends southward from Lewis River, WA to about Eugene, OR.

### **Zone 605 - Oregon Cascade Foothills (north)**

Represents foothill elevations of the north Oregon Cascades. This is mainly comprised of ODF protected private land.

Bounded by the eastern periphery of the Willamette Valley on the west and by the edges of the Mt. Hood and Willamette National Forests on the east. This coincides with ODF regulated use area CM-1. The north boundary is the Columbia River and the north boundary is Oregon State Highway 22.

### **Zone 606 - Oregon Cascade Foothills (central)**

Represents foothill elevations of the central Oregon Cascades. This is mainly comprised of ODF protected private land.

Bounded by the eastern periphery of the Willamette Valley on the west (Interstate 5 south of Eugene) and the western edges of the Willamette and Umpqua National Forests. This coincides with ODF regulated use areas LN-1 and EL-1. Extends southward from Oregon State Highway 22 to the Lane/Douglas County line.

### **Zone 607 – High Oregon Cascades (north)**

Represents the Mt Hood National Forest except for the Barlow and Bear Springs Ranger Districts (which are east of the Cascade Crest). This includes interior Cascade wilderness areas.

Bounded by the Columbia River on the north, the Cascade crest on the east and the Mt Hood forest boundary on the south and west. This includes ODF regulated use areas MH-3 and MH-2 and the western portion of MH-4.

### **Zone 608 – High Oregon Cascades (central)**

Represents the entire Willamette National Forest .

Bounded by the Cascade crest on the east and the Willamette Forest boundary on the south, west and north. This coincides with ODF regulated use areas WL-1, WL-2, and WL-3.

# Portland Fire Weather

## Forecast District

### **Zone 609 - East Slopes of Oregon Cascades (north)**

Represents the portion of the Mt Hood National Forest which lies east of the Cascade crest including the Barlow and Bear Springs Ranger District. This also includes ODF regulated use area MH-1 and the eastern portion of MH-4. Zone 609 does not include the Columbia Gorge National Scenic area.

The western boundary is the Cascade crest on the west and the northern boundary is a line about 5 miles south of the Columbia River Gorge Scenic area. The southern boundary is the northern edge of the Warm Springs Indian reservation. The eastern boundary lies along Oregon State Highway 197 south to the Deschutes River at Maupin; then follows the Deschutes River south to the Warm Springs Indian Reservation boundary.

### **Zone 610 - East Slopes of Oregon Cascades (central)**

Represents Warm Springs Indian Reservation and the Sisters Ranger District of the Deschutes National Forest.

Bounded by the Cascade crest on the west and all other boundaries of the Warm Springs Reservation and Sisters Ranger District elsewhere. This coincides with ODF regulated use areas DE-1 and WC-2 north of Bend.

### **Zone 611 – East Slope of Oregon Cascades (central)**

Includes the Deschutes National Forest except for the Sisters RD...includes interior islands of private land and high Cascade wilderness areas. This includes most, but not all, of ODF's Walker Range protection area. as well as the southern half of ODF regulated use areas DE-1 and WC-2.

Bounded on the west by Cascade crest coinciding with the western boundary of ODF regulated use area DE-1 and on the north by the southern boundary of the Sisters RD. Bounded on the east and south by the Deschutes National Forest boundary which also coincides with ODF regulated use area WC-2.

### **Zone 660 - Extreme South Washington Cascades**

Represents the Wind River, Mt. Adams and St. Helens ranger districts of the Gifford Pinchot National Forest as well as adjacent Washington State DNR protected Cascade and Green Mountain foothills to the south and west. It excludes the Columbia River lowlands of Clark County, WA in zone 604.

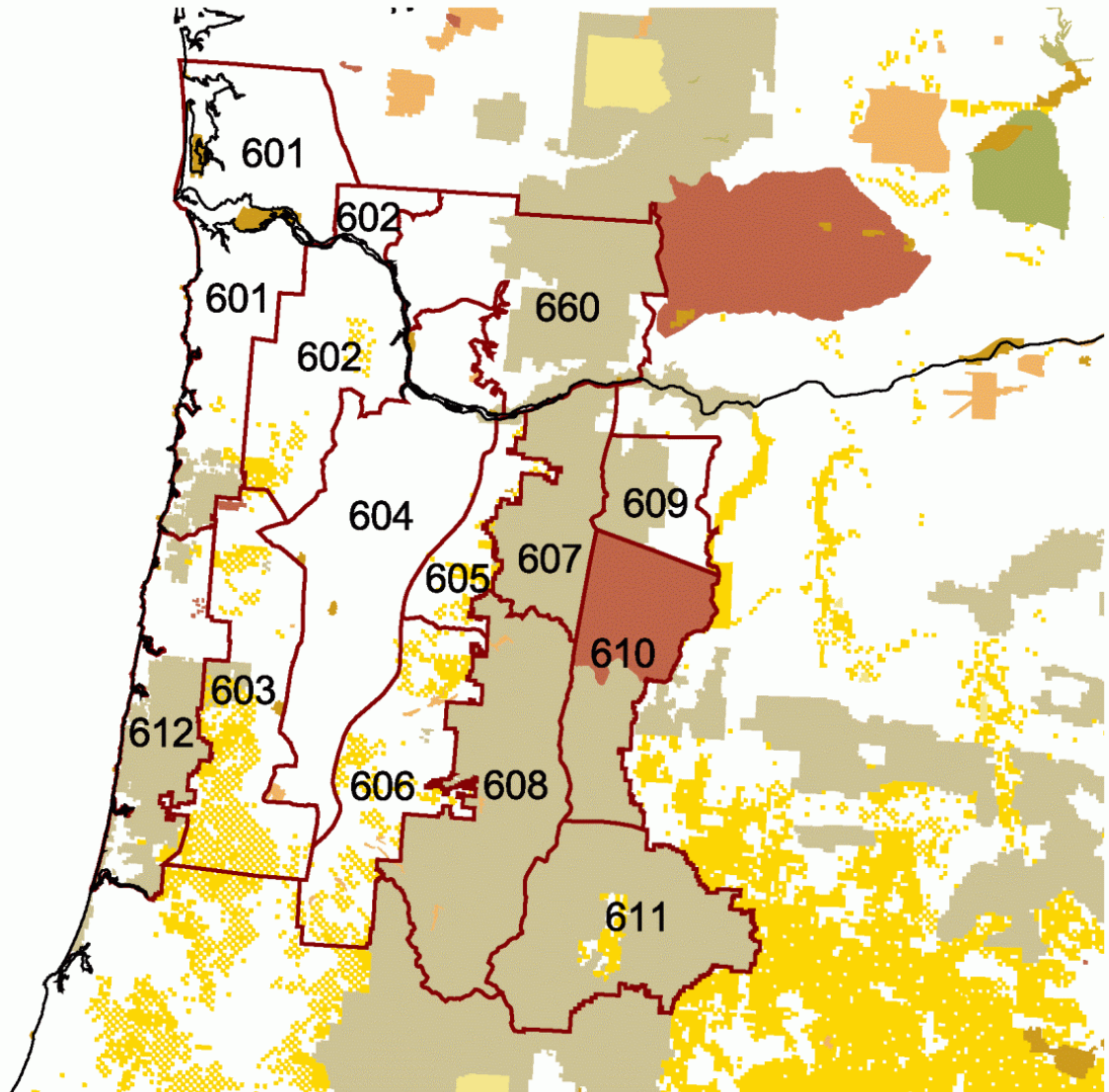
Bounded on the east by the eastern edge of the Gifford Pinchot National Forest boundary (approximately the Cascade crest); The southern boundary follows the Columbia river westward to the Clark County WA line; from there the boundary heads NNW following the contour of the Cascade foothills to the Lewis River; then westward along the Lewis River to the Columbia River; then the boundary follows the Columbia River northward to Kelso Wa; The northern boundary extends from Kelso northeastward following the contour of the Green Mountain/Cascade foothills to the Lewis County line; then eastward to the Cascade crest, bisecting the Gifford Pinchot NF along the northern boundary of the St. Helens and the Mt Adams ranger districts.

## 2002 PORTLAND NFDRS STATION INDEX

Zone	Number	Name	Type	Agency	Lat	Lon	Elev	Aspect	TwN	Rng	Sec
601	450404	WILLAPA	M	DNR	46.6	-123.6	60	FLAT	13N	08W	S10
	450407	HUCKLEBERRY	R	DNR	46.5	-123.38	2500	MIDSLOPE	12N	06W	S22
	350208	TILLAMOOK	R	ODF	45.26	-123.5	60	FLAT	01S	09W	S29
	350215	CEDAR CREEK	R	USFS	45.21	-123.77	2240	RIDGETOP	04S	09W	S22
602	350216	SOUTH FORK	R	ODF	45.56	-123.49	2120	RIDGETOP	01N	07W	S12
	350308	MILLER	R	ODF	46.02	-123.27	1090	RIDGETOP	06N	05W	S11
	350505	RYE MOUNTAIN	R	BLM	45.22	-123.53	1960	RIDGETOP	04S	07W	S09
	451207	CASTLE ROCK	M	DNR	46.3	-122.9	213	FLAT	09N	02W	S14
	451209	ABERNATHY	R	DNR	46.35	-123.1	2000	RIDGETOP	10N	03W	S19
603	351710	ROCKHOUSE1	R	ODF	44.93	-123.47	2000	MIDSLOPE			
	351811	WILKINSON RDG	R	USFS	44.33	-123.72	1370	RIDGETOP	14S	09W	S24
	352542	CLAY CREEK	R	ODF	44.02	-123.21	1600		19S	07W	S29
	352547	VILLAGE CREEK	R	BLM	44.25	-123.47	1500	RIDGETOP	16S	07W	S01
	352550	HIGH POINT	R	BLM	43.91	-123.38	1935	RIDGETOP	19S	06W	S23
604	451306	VANCOUVER	M	DNR	45.7	-122.7	210	FLAT	02N	01E	S28
	351911	STAYTON	R	ODF	44.75	-122.87	507	FLAT	09S	02W	S36
	351813	FINLEY	R	USFWS	44.42	-123.33	330				
605	350727	HORSE CREEK	R	BLM	44.94	-122.4	2000	RIDGETOP	07S	03E	S23
	350728	EAGLE CREEK	R	ODF	45.37	-122.33	744	MIDSLOPE	02S	04E	S28
606	352024	YELLOWSTONE	R	BLM	44.6	-122.42	3080	FLAT	11S	03E	S22
	352549	HAWLEY BUTTE	R	BLM	43.71	-122.84	3058	RIDGETOP	21S	01W	S29
	352552	TROUT CREEK	R	BLM	44.11	-122.58	2400	RIDGETOP	17S	02E	S09
	352553	BRUSH CREEK	R	BLM	44.28	-122.85	2300	RIDGETOP	15S	01W	S07
607	350718	RED BOX BENCH	R	USFS	45.03	-121.92	3250	MIDSLOPE	06S	07E	S23
	350725	SI SI LOOKOUT	M	USFS	44.92	-121.83	5617	RIDGETOP			
	350726	WANDERER'S PK	R	USFS	45.11	-122.2	4350	RIDGETOP	05S	05E	S28
	350811	BLUE RIDGE	R	USFS	45.52	-121.72	3780	RIDGETOP	01S	09E	S06
	350604	LOG CREEK	R	USFS	45.51	-121.9	2500	MIDSLOPE	01S	07E	S12
	350902	CLEAR LAKE	M	USFS	45.15	-121.58	4458	RIDGETOP			
608	352554	PEBBLE	R	USFS	44.23	-121.98	3560	MIDSLOPE	15S	07E	S29
	352557	FIELDS	R	USFS	43.73	-122.28	3360	RIDGETOP	22S	04E	S11
	352558	EMIGRANT	R	USFS	43.47	-122.22	3840	RIDGETOP	24S	05E	S21
	351909	BOULDER CREEK	R	USFS	44.98	-122	3570	VALLEY	10S	07E	S07

609	350912	POLLYWOG	R	USFS	45.46	-121.45	3320	MIDSLOPE	01S	11E	S29
	350913	WAMIC MILL	R	USFS	45.24	-121.45	3320	MIDSLOPE	04S	11E	S08
610	350909	SIDWALTER BUTTE	M	BIA	44.93	-121.54	3000	RIDGETOP	07S	10E	S27
	350916	MT. WILSON	R	BIA	45.03	-121.63	3780	MIDSLOPE	07S	13E	S32
	350917	MUTTON MTN	R	BIA	44.93	-121.19	4100	RIDGETOP	07S	13E	S32
	350920	HE HE 1	R	BIA	44.97	-121.49	2640	VALLEY	07S	10E	S13
	352102	SHITIKE BUTTE	M	BIA	44.74	-121.61	5000	RIDGETOP	09S	09E	S36
	352106	EAGLE BUTTE	M	BIA	44.84	-121.23	3100	RIDGETOP	08S	13E	S30
	352108	WARM SPRINGS	M	BIA	44.78	-121.25	1632	VALLEY	09S	12E	S24
	352110	METOLIUS ARM	R	BIA	44.61	-121.63	3440	VALLEY	11S	09E	S12
	352620	COLGATE	R	USFS	44.32	-121.61	3280	FLAT	15S	09E	S36
611	352605	ROUND MOUNTAIN	R	USFS	43.76	-121.72	5900	RIDGETOP	21S	08E	S13
	352618	LAVA BUTTE	R	USFS	43.93	-121.33	4655	RIDGETOP	19S	12E	S18
	352619	CAMP2	R	USFS	43.78	-121.05	4770	RIDGETOP	21S	14E	S02
	353342	BLACK ROCK	R	USFS	43.52	-121.81	4880	MIDSLOPE	24S	08E	S06
	353402	CABIN LAKE	R	USFS	43.5	-121.06	4545	FLAT	24S	14E	S17
612	351604	CANNIBAL MTN	R	USFS	44.35	-123.89	1946	RIDGETOP	14S	10W	S15
	352545	GOODWIN PEAK	R	USFS	43.93	-123.89	1826	RIDGETOP	19S	10W	S09
	352559	DUNES	R	USFS	43.96	-124.12	20	FLAT	18S	12W	S02
660	451208	ELK ROCK	R	USFS	46.35	-122.6	2500	RIDGETOP	10N	03E	S35
	451301	LARCH MOUNTAIN	M	DNR	45.7	-122.3	1150	RIDGETOP	03N	04E	S20
	451917	TROUT CREEK	R	USFS	46.12	-121.68	3600	MIDSLOPE	07N	09E	S08
	451921	CANYON CREEK	R	USFS	45.92	-122.17	2500	RIDGETOP	05N	05E	S08
	451922	CEDAR FLATS	R	USFS	46.13	-122.12	2320	RIDGETOP	07N	06E	S02
	451928	HAMILTON	R	DNR	45.7	-122.07	3000	RIDGETOP	02N	06E	S09

## Portland Fire Weather Zone Map





**2002**

**Pendleton Fire Weather**

**Office Plan**

National Weather Service  
2001 NW 56<sup>th</sup> Drive  
Pendleton, Oregon 97801-4532

# Pendleton Fire Weather

## Location

The National Weather Service Office in Pendleton is located at 2001 NW 56 th Dr. Pendleton, OR 97801.

## Hours

Fire Season      7:00 AM - 4:00 PM      7 days a week  
Normally mid-June to Late-September.

Off Season      8:00 AM- 4:00 PM      5 days a week.

The Pendleton Fire Weather Program is committed to a program with staffed trained to respond to fire weather needs 24 hours per day. If there is a need to support a project, additional forecasters can be made available. However, under the provisions of the National Fire Weather Agreement, special services provided by the Pendleton National Weather Service Office will be done on a reimbursable basis.

## Phone Numbers

Fire Weather Desk      see regional mob guide

General      see regional mob guide

Fax      see regional mob guide

## Internet Address

<http://www.wrh.noaa.gov/pendleton>

## Staff

Name	Position
Bruce Bauck	Meteorologist in Charge
Dennis Hull	Warning Coordination Meteorologist
Jon Mittlestad	Science and Operations Officer

All Senior and Journeyman Forecasters will train and work on the Fire weather desk this coming year. However a core group of forecasters will provide the majority of forecasts. The core group includes

Bob Tobin	Program Leader/IMET
Joe Solomon	IMET
Mary Smith	Senior Forecaster
Roger Cloutier	Senior Forecaster
Wade Earle	Information officer

# Pendleton Fire Weather

## Communications

All forecasts including spot forecasts are input into the National Weather Service communication system and on Pendleton's Internet homepage. Forecasts can also be faxed to customers who do not have access to these systems. NWSO-Pendleton's home page address is:

<http://www.wrh.noaa.gov/pendleton>

## Weather Briefings

Internet based weather briefings will begin around June 1 at 0930 PDT. During Land Management season briefings will be held Monday and Thursday. During peak fire season, normally mid June-September briefings will be daily at 0930 PDT. Phone briefings are available 24 hours per day.

## Agencies Served

**USFS:** United States Forest Service

**BLM:** Bureau of Land Management

**NPS:** National Park Service

**BIA:** Bureau of Indian Affairs

**USF&W:** United States Fish and Wildlife

**ODF:** Oregon Department of Forestry

**DNR:** Department of Natural resources  
Southeast Washington Area

# Pendleton Fire Weather

## Forecast Services

### Pre-suppression and Land Management Forecasts

Routine land management forecasts are issued in the Spring and Fall during the prescribed fire burning season. Forecasts are available twice a day Monday through Friday at 0900 and 1530 PDT. Specific start and stop dates are coordinated with customer agencies. Routine pre-suppression forecasts are available twice daily during the heart of the fire season, usually from mid June through late-September. They will be issued at 0900 and 1530 PDT. The afternoon forecast will contain numerical NFDRS zone trend data appended at the end.

### Spot forecasts/Special request Forecasts

Spot forecast are available year round 24 hours/day for wildfires, prescribed fires, or any other critical land management activities conducted by federal land management agencies. Spot forecasts will be available year-round to state forestry agencies and local fire departments for wildfire suppression and hazard mitigation. We are urging land managers to customize spot forecast requests for the parameters that are needed and provide critical weather thresholds that may adversely impact the burn, such as wind, relative humidity, or burn period. This will allow the forecaster to concentrate on the specific data and time line needed rather than a host of parameters that may be of little interest. **Spot forecasts for wildfire suppression take precedence over normal office routines.**

Information required by the weather forecaster from the requesting agency is found on WS form D-1, items 1-12. We are asking for **BOTH** the legal description, as well as, the latitude/longitude. This will aid the forecaster in finding the burn area.

A spot forecast for a planned ignition the next day may allow us to provide you with more lead time before the planned prescribed burn. **Feedback of how well the forecast verified is extremely valuable in order to provide more accurate subsequent forecasts.**

Spot forecasts requests will be accepted electronically via our internet web site: **[www.wrh.noaa.gov/Pendleton](http://www.wrh.noaa.gov/Pendleton)**.

# Pendleton Fire Weather

## Forecast Services (cont)

### Numerical Probability Forecasts

An ongoing experimental numerical probability forecast will be issued for Zone 632 and will be appended to the afternoon fire weather forecast. This segment of the afternoon Fire Weather Forecast provides numerical probability trends forecasts for selected parameters over a five day period. The parameters included will be:

- Probability of lightning anywhere in the zone
- Probability of a wetting rain, (.10 inch or more of continuous rainfall) anywhere in the zone
- Probability of average RH values less than 15% in the zone
- Probability of average sustained surface winds 14 mph or greater in the zone

### Fire Weather Watches and Red Flag Warnings

Please refer to the Glossary for the formal definitions of Fire Weather Watches and Red Flag Warning events. Specific Red Flag criteria differ for each situation and district. The following are some criteria which would warrant a Fire Weather Watch/Red Flag Warning in the Pendleton Fire Weather District:

#### Criteria

Any or a combination of the following combined with very dry fuels are criteria for the issuance of a Fire Weather Watch or a Red Flag Warning depending on the lead time:

- Dry Lightning - Thunderstorms produce less than .10 of an inch of precipitation.
- Lightning, (wet or dry) after an extended dry period
- Strong winds combined with low RH's which meet the criteria which will be determined by the RH/WIND criteria table below.
- Significant dry cold frontal passages
- Very low humidity, less than or equal to 10% in the afternoon with poor recovery at night...35% or less.

# Pendleton Fire Weather

## Forecast Services (cont)

### Fire Weather Watches and Red Flag Warnings (continued)

Table A.: National Weather Service Pendleton Wind vs RH Red Flag/Fire Weather Watch Criteria Table. Note: This is only one element in determining the necessity for a Red Flag Warning or Fire Weather Watch and shall not be the solitary justification.

Columbia Basin ZONES 631- 675 and 681 -

SUSTAINED 20 FT WIND OVER WIDESPREAD AREA  
(10 MINUTE AVERAGE in MPH)

	5	10	15	20	25	30 (MPH)
30						W
25					W	W
20				W	W	W
15			W	W	W	W
10		W	W	W	W	W

RH(%)

The Central and Northeast Mountains ZONES 630...632-635  
AND ZONE 638

SUSTAINED 20 FT WIND OVER WIDESPREAD AREA  
(10 MINUTE AVERAGE in MPH)

	10	15	20	25	30	35 (MPH)
30						
25					W	W
20			W	W	W	W
15		W	W	W	W	W
10		W	W	W	W	W

RH (%)

# Pendleton Fire Weather

## Forecast Services (cont)

### Fire Weather Watches and Red Flag Warnings (continued)

A Red Flag Warning or Fire Weather Watch may be issued if the wind and humidity fall within the 'warn' section of the table AND fuels, both live and dead are dry.

- The forecaster is required to check with fire/land management agencies to ensure that 1 hr and 10 hr fuels are dry enough to support active fire.
- 1000 Hr fuel moisture less than 12%.

### Dissemination:

Red Flag Warnings and Fire Weather Watches shall be issued using the Red Flag Statement (RFW) and will be headlined in the routine Fire Weather Forecast. All Red Flag Warnings and Fire Weather Watches will be cancelled using the Red Flag Warning Statement (RFW) and the Fire Weather Forecast will include a headline stating such. All Red Flag Warnings will be disseminated utilizing the National Warning System (NAWAS) network.

All issuances of Red Flag events will be coordinated before hand with the agencies included in the watch/warning area and with adjacent fire weather offices if the watch/warning is for a zone on a common district boundary. In order to rapidly disseminate Fire Weather Watches/Red Flag Warnings or other information of rapidly changing or hazardous weather conditions that do not meet Red Flag criteria, but will affect fire control or pose a safety threat a priority calling list has been established. NWFO Pendleton will contact the following dispatch office who will provide the appropriate agency notification. If the primary dispatch office is not available, the backup dispatch office may be requested to conduct the notification.

Primary Phone Number:	xxx-xxx-xxxx	Umatilla Dispatch
First Backup:	xxx-xxx-xxxx	NE Oregon Dispatch
Second Backup:	xxx-xxx-xxxx	Malheur Dispatch
Third Backup:	xxx-xxx-xxxx	Central Oregon

# Pendleton Fire Weather

## Non- Forecast Services

There are several duties that fall into the non-forecast services, including but not limited to teaching assignments, customer meetings, customer consultations, preparation of annual reports, preparation of annual operating plans, program management, research and in-house training of personnel.

There is a need for advanced notice for teaching assignments, customer meetings and consultations. The NWS-NWSEO Negotiated Agreement provides rules for scheduling of bargaining unit employees. NWS management has limitations regarding modification of the work schedule after it has become "fixed" without paying overtime.

All requests for teaching assignments, customers meetings and customer consultations will be honored provided the are scheduled more than three weeks ahead of time, and they do not conflict with other Fire Weather commitments. NWS Pendleton will make every effort to fulfill requests for teaching assignments, customer meetings customers meetings and customer consultations will be honored provided the are scheduled more than three weeks ahead of time, and they do not conflict with other Fire Weather commitments. NWS Spokane will make every effort to fulfill requests for teaching assignments, customer meetings and consultations that are scheduled with less than three weeks lead time, or conflict with other Fire Weather commitments. Shifts will be scheduled to complete the Annual Operating Plan and the Annual Report. Program management, research and training time will be provided to ALL employees based on needs of the office.

## User Agency Responsibilities

Routine verification will be made on Red Flag Warnings and Spot Forecast turnaround times. In addition selected NFDRS trend forecasts for temperature, relative humidity, and fuel moisture will be verified. Results of the verification will be published in the Fire Weather Annual Summary. The National Weather Service will work with local fire agencies and the Pacific Northwest Coordination Group to develop a baseline for product verification.

## Forecast Verification

Routine verification will be made on Red Flag Warnings and Spot Forecast turnaround times. In addition selected NFDRS trend forecasts for temperature, relative humidity, and fuel moisture will be verified. Results of the verification will be published in the Fire Weather Annual Summary. The National Weather Service will work with local fire agencies and the Pacific Northwest Coordination Group to develop a baseline for product verification.

# **Pendleton Fire Weather**

## **Fire Weather Forecaster Proficiency and Currency Standards**

The National Weather Service proficiency standards for service to the fire weather users are shown in Appendix A. The National Weather Service and the Pacific Northwest Coordination Group will review the progress in meeting the standards. Prior to each fire season, the Annual Operating Plan will provide a list of currently qualified forecasters and those expected to be qualified at each weather Forecast office who will be providing fire weather services during the upcoming year.

## **Forecast District**

The Pendleton Weather Forecast Office Fire District currently covers the northeast quadrant of Oregon, much of central Oregon east of the Cascade mountain range (Crook county, the east parts of Jefferson and Deschutes county), The extreme northern portion of Harney county, and a large portion of south central and southeast Washington. Please see the district map for specific outlines of the Fire Weather Zones.

## **Geographical Area Descriptions**

The Pendleton Fire Weather forecast is sectioned into five forecast areas. These areas were originated based on terrain, elevation, vegetation, and weather characteristics. Occasionally a forecast area may need to be subdivided into separate areas if weather conditions are not representative throughout the entire area. The following are descriptions of each of the three areas in the Pendleton Fire Weather district.

# Pendleton Fire Weather Geographic Area Descriptions

## **Yakama Alpine District (zone 681)**

This area covers the extreme southern Cascades crest down to the southern boundary of the Yakama Indian agency and east across the foothills of the east slopes of the Cascades. This includes the higher terrain of the Yakama Indian Agency. Elevations range from just under 3000 feet to near 5000 feet. This district has pronounced climate differences, from the marine air influence near the Cascade crest, to the dry, desert climate above the Columbia River. It is windy with a relative low occurrence of lightning.

## **Columbia Basin of Washington (zone 675)**

This area covers the from the north boundary of the Yakima Indian Agency to the breaks of the Columbia river and east to the Columbia. This includes the lower elevations of the Yakima Indian Agency, The Yakima Firing Range and Hanford Nuclear Reservation. Elevations range from near 300 feet along the Columbia River to over 3000 feet in the Rattlesnake Hills. This district is dry, desert climate near the Columbia River. A “rain shadow” is often created from weather systems that move inland from the Pacific. It is windy with a relative low occurrence of lightning, down slope foehn type winds are not uncommon during the fire season. It averages 18 storm-days per season from June through September.

## **Lower Columbia Basin of Washington and Oregon (zone 631)**

This area is characterized as flat or smooth rolling hills in the Lower Columbia Basin of Northeast Oregon and Southeast Washington. Elevations range from about 200 ft MSL to approximately 3000 ft MSL along the foothills of the Blue Mountains. The weather in this area is characterized as warm to hot and dry during the summer with little precipitation, especially July through September. This is one of the driest zones in the district. The Cascade Mountains to the west and the Blue Mountains to the east have a considerable influence on this area. A “rain shadow” is often created from weather systems that move inland from the Pacific. Also, down slope foehn type winds are not uncommon during the fire season. The Columbia River Gorge frequently causes strong channeling of westerly winds into the area after a cold front passage, but with little rainfall.

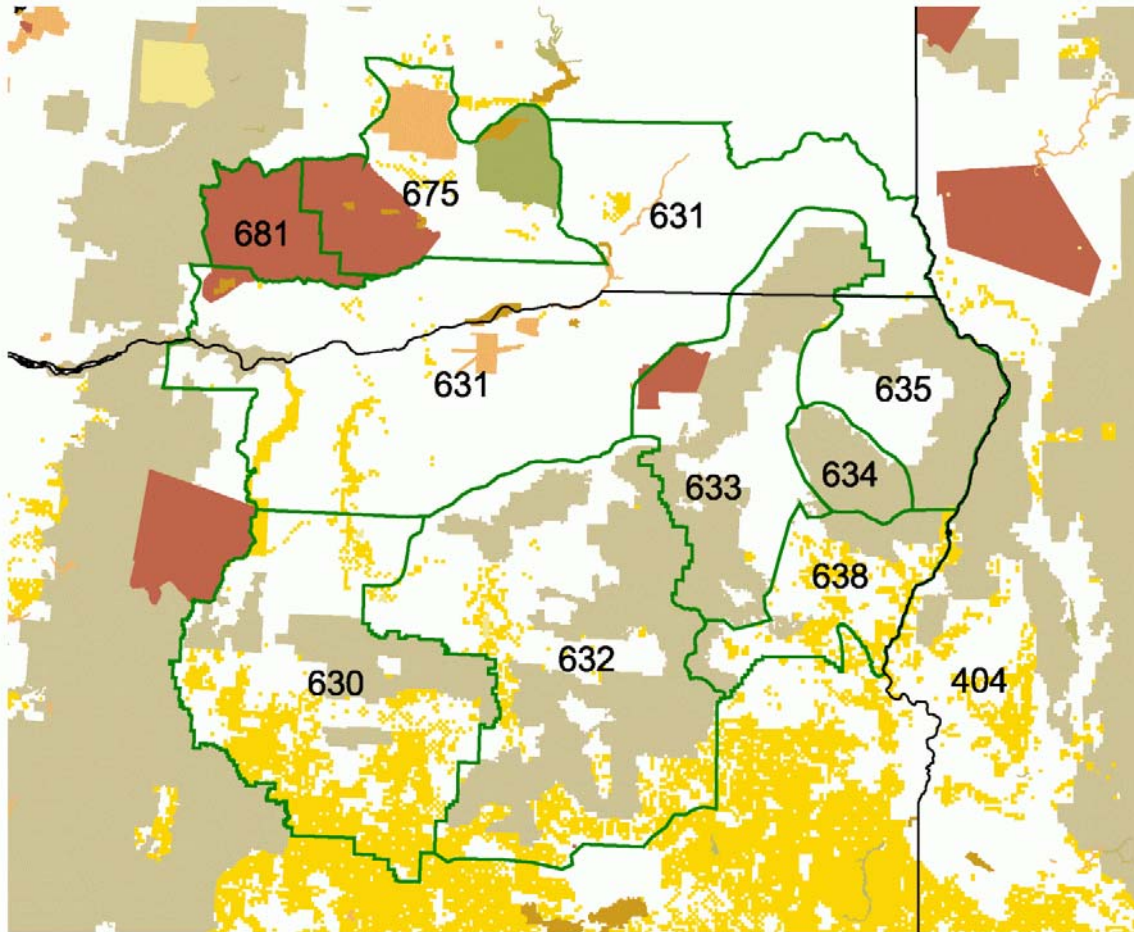
## **Central Oregon Mountains (zone 630)**

This zone has the largest variability in terrain ranging from mountains with steep slopes, and narrow canyons to high elevation rolling hills, grasslands, meadows, and river valleys. Elevations range from about 3500 ft MSL to over 6000 ft MSL. Weather conditions can vary widely and are influenced by the terrain on a diurnal basis. Annual precipitation amounts range from near 10 inches on the grasslands to near 35 inches in the Ochoco mountains, with the majority of the precipitation occurring during the winter months. Heavy fuel loadings and the availability of ladder fuels in the higher elevations, give this area the potential to develop large, crowning project fires resulting from the combination of dry lightning, gusty winds, and prolonged drought.

## **Northeast Oregon Mountains (zone 632-635, and 638)**

Terrain in this area is highly variable and complex, ranging from high mountains, steep slopes, and narrow canyons to flat plateaus, meadows, and wide river valleys. Elevations range from about 2500 ft MSL to over 9000 ft MSL. Weather conditions vary widely and are largely influenced by the terrain on a diurnal basis. Annual precipitation amounts range from less than 20 inches in some valleys to over 60 inches in the highest mountains, with the majority of the precipitation occurring during the winter months. As a result of heavier fuel loadings and the availability of ladder fuels in the higher elevations, this area is the most likely area to develop large, crowning project fires resulting from the combination of dry lightning, gusty winds, and prolonged drought.

## Pendleton Fire Weather Zone Map





**2002**

**Medford Fire Weather**

**Office Plan**

National Weather Service  
4003 Cirrus Drive  
Medford, Oregon 97501

# Medford Fire Weather

**Location** 4003 Cirrus Drive  
Medford, Oregon 97501

Medford Fire Weather is located at the Medford National Weather Service Office near the Rogue Valley Airport in Medford Oregon. The office maintains 2 air transportable mobile units (ATMU) and 2 laptop computers with modem for on-site support of wildfires. Fire weather forecasts and other products are disseminated to state and federal agencies through AWIPS (NWS Communications systems), WIMS and through our homepage.

**Telephone Numbers** Primary Fire Weather.....see regional mob guide  
Secondary Fire Weather.....see regional mob guide  
Fax.....see regional mob guide

**Staff** The Medford office is staffed with 14 full-time meteorologists. All forecasters participate in producing fire weather forecasts after each has completed the training, which includes correspondence course, computer-based Fire Weather Training Module, mesoscale analysis, climatological and terrain familiarization, and spot forecast training.

<b>Roger Williams</b>	<b>Meteorologist-in-charge</b>
<b>Forecast staff</b>	
• James Reynolds	Warning Coordination Meteorologist
• Dennis Gettman	Science Operations Officer
• Frederic Bunnag	Program Leader/ Senior Meteorologist (IMET)
• Michael Stavish	Senior Meteorologist (IMET)
• Michael O'Brien	Senior Meteorologist
• Ryan Sandler	Senior Meteorologist
• Jay Stockton	Senior Meteorologist
• Robert Cramp	Meteorologist
• Rick Holtz	Meteorologist
• Sven Nelaimischkies	Meteorologist
• Shawn Rossi	Meteorologist
• Dan Weygand	Meteorologist
• Matthew Wolf	Meteorologist
• William Ludwig	Service Hydrologist

## Medford Fire Weather

### Forecast Services

#### FIRE WEATHER AND LAND MANAGEMENT FORECASTS

The Land Management Forecast is issued during the off-season, usually from mid-October to May. The forecast is available in WIMS and on the homepage daily by 7:00 AM. The frequency of the Land Management Forecast and the forecast elements may be increased as the fire season approaches. The Fire Weather Program manager will survey the user agencies throughout the off season to determine when extra forecasts are needed.

During the fire season, the Fire Weather Forecasts will be issued twice daily at 0730 and 1500 PDT. The forecast follows the national standard format introduced during the 2001 fire season. NFDRS zone trend forecasts for specific meteorological parameters are issued with the afternoon Fire Weather Forecast. When necessary, trend forecasts will be updated on the morning Fire Weather forecast on the following day.

The Medford Forecast Office will activate the internet fire weather briefing around the middle of May and continue through the end of the fire season. The briefing will be narrated by the forecaster on duty and the time will be determined according to agency needs. Every fire and land agency is encouraged to dial into the conference call and ask questions. The graphics for the briefing can be accessed via the Fire Weather Section of the homepage under the Fire Weather Briefing subsection. The dial-in phone number will be provided approximately one week before the briefing starts. Commencement time of this call will be coordinated with the fire agencies.

#### FIRE WEATHER WATCHES AND RED FLAG WARNINGS

Fire Weather Watches and Red Flag Warnings will be issued when the following weather criteria are expected, in conjunction with certain fuel situations.

##### **Fuel Situations that must be met are:**

- 1000 hour timelag fuel moisture < 15%
- Live fuel moisture 120% or less
- Annuals are cured.

##### **Weather Criteria that must be met:**

##### **DRY LIGHTNING OUTBREAK**

- Lightning coverage is scattered or greater
- Thunderstorm precipitation:

0.25 inches west of Cascades  
0.10 inches east of Cascades

## Medford Fire Weather

### Forecast Services

(Continued)

#### COMBINATION STRONG WINDS WITH LOW HUMIDITY

- For all zones except zone 625
  - RH < 15% AND sustained wind 20 mph
- Zone 625
  - RH < 10% AND sustained wind 20 mph
  - RH < 15% AND sustained wind 25 mph
  - RH < 20% AND sustained wind 30 mph

#### COMBINATION STRONG WINDS WITH LOW HUMIDITY RECOVERY AT NIGHT DUE TO A STRONG DOWNSLOPE EAST WIND EVENT

- RH recovery < 40% AND sustained wind > 10 mph.

#### DRY AND UNSTABLE AIRMASS

- Haines Index 6 in conjunction with extremely dry fuels.

All Red Flag Warnings will be coordinated with the affected agencies and neighboring fire weather offices, in order to assess fuel conditions and general fire danger, before the issuance of a Red Flag Warning. Each issuance, update or cancellation of a Fire Weather Watch or Red Flag Warning will also be relayed by telephone to the dispatch office(s) affected by the watch/warning.

#### SPOT FORECAST

Spot forecasts are available year-round to federal land management agencies upon requests for wildfires, prescribed fires, spray projects and other land management activities. Spot forecasts are available to state forestry agencies and local fire departments for wildfire suppression only. Information required by the forecasters is found on WS Form D-1, items 1-12. Spot forecasts may be requested using the WS Form D-1 with the information faxed to the Medford office or relayed by phone. They may also be requested by filling out pertinent information in the Fire Weather Spot section of the Medford Weather Forecast Office homepage. We strongly encourage the fire agencies to call this office after submitting a spot request to ensure that it was received properly. Spot forecasts for wildfire suppression take precedence over normal office routines.

## Medford Fire Weather

### Forecast District

#### **AREA 1...COAST (Zones 615 and 618)**

This area extends from the Pacific Ocean to the foothills of the Coast Range, which rises to a crest of 2500 to 4500 feet, about 30 to 40 miles inland.

#### **AREA 2...UMPQUA BASIN (Zones 616 and 617)**

This area is located between the Coast Range and the crest of the Cascades mountains. The western portion of the area, mainly the Coast Range, varies in elevation between 2000 and 4500 feet, whereas the eastern portion rises to 4000 and 6000 feet with some peaks reaching as high as 8500 feet.

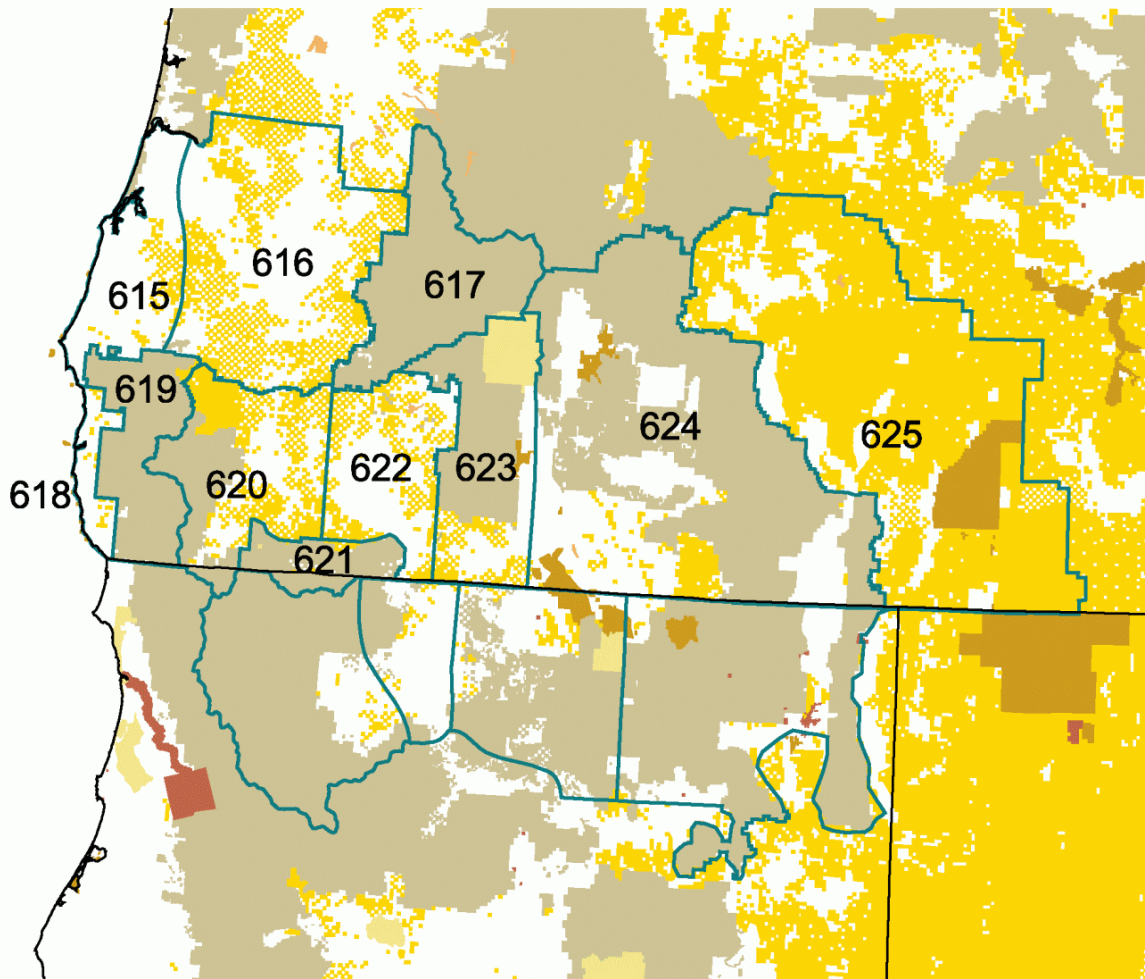
#### **AREA 3...SOUTHWEST INTERIOR INCLUDING THE CASCADE AND THE SISKIYOU MOUNTAINS (Zones 619-623)**

This area has complex terrain. The western boundary begins with the Coast Range, where elevations range from 3000 to 5000 feet. The area includes the Illinois Valley, the Siskiyou Mountain with peaks reaching as high as 7500 feet and the Rogue Basin. The area's eastern boundary includes the Cascade Mountains, where elevations can reach 6500 feet with a few peaks over 8000 feet high. Crater Lake is in the very northeast corner of this area.

#### **AREA 4...EAST OF THE CASCADE MOUNTAIN (Zones 624 and 625)**

This area extends from the eastern foothills of the Cascade Mountains, with the elevation around 5000 feet, across the Klamath Basin with the elevation around 4000 feet. To the east of the Klamath Basin, this area includes a series of ridges, hills, then the Fremont Mountains and the Warner Valley on the northwest rim of the Great Basin. The eastern boundary of this area closely follows the border between Lake county and Harney county, and is representative of high plateaus with desert-like climate.

## Medford Fire Weather Zone Map



# BOISE FIRE WEATHER OPERATING PLAN

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**I.. TIMES OF OPERATIONS**

Boise Fire Weather Office

- 4/15 through 5/15 Forecaster on duty 0800-1600 MDT, Mon-Fri
  - One general forecast issued 1600 MDT, except another at 1000 MDT on Monday.
- 5/16 through 10/28 Forecaster on duty 0800-1700 MDT, 7 days a week.
  - Two general forecasts issued, 0900 and 1600 MDT.

Remainder of the year 0800-1600 MST, Mon-Fri. Forecasts as needed.

We will attempt to adhere to this schedule. However, some changes may occur when the office staffing is reduced due to wildfires, classroom instruction, sickness, etc.

This Forecast office is staffed 24-hrs a days, seven days a week throughout the year. Meteorologists trained in fire weather forecasting will be on duty and available for spot forecasts outside of normal fire weather working hours.

**II. STAFF**

Name	Position
Chuck Redman	Fire Weather Program Leader/ IMET
Mike Proud	Fire Weather Forecaster
John Jannuzzi	Meteorologist in charge
Larry Van Bussum	Staff Meteorologist to NIFC

Some others that might fill in and work the Fire desk:

Matt Fugazzi	Forecaster
Jeanne Allen	Forecaster
George Skari	Forecaster
Colleen Decker	Forecaster

Fire Weather Telephone Number	see regional mob guide
Fax Number	see regional mob guide

### III. NEW FOR THE 2002 SEASON

The Burns BLM (Oregon Zone 636) has also been added to the Boise Fire Weather office area of concern. This makes 2 zones in Oregon that Boise is responsible for...Vale BLM and Burns BLM.

### IV. CONTINUED FOR THE 2002 SEASON

The daily internet briefing will once again be offered for all agencies at 0930 MDT, seven days a week. This briefing will include a general discussion of weather conditions and forecasts for the current day, as well a brief discussion of the extended period. Model data, satellite loops, and other items of interest in the forecast period. During the briefing, the appropriate maps will be able to be viewed via the internet and the Boise Fire Weather website. The briefing should last approximately 15 minutes, or longer if necessary during times of significant fire activity. With this internet briefing, we will no longer be issuing a Noon update.

Last years procedure for requesting spots via the Boise Fire Weather homepage is back again for this year. Phone calls are still encouraged when requesting spot forecasts.

The discussion segment of the general forecast will continue to be limited to approximately 8 lines or less. This "short and sweet" description of the forecast will allow for the dispatch offices to transmit what they need in a short time, without having to take time to edit out unnecessary portions.

Smoke dispersal parameters in the form of mixing heights and transport winds will continue to be included in the daily fire weather forecasts. The mixing height is defined as the height above the ground (agl) through which relatively vigorous mixing will take place due to convection. The transport wind is defined as the average wins speed and direction within the mixing layer. Higher mixing heights and stronger transport winds result in better smoke dispersal. Spot forecasts for prescribed burns in Idaho will also include the ventilation index (mixing height times the transport winds, divided by 100).

### V. DESCRIPTION OF THE BOISE FIRE WEATHER DISTRICT:

#### Western Idaho/ Southeast Oregon

##### West Central Idaho Mountains...

Zone 401 - West portion of the Payette NF and Southern Idaho Timber Protection Agency (SITPA)

Zone 402 - East portion of the Payette NF

Zone 403 - North portion of the Boise NF

Zone 404 - south portion of the Boise NF and the extreme north portion of the Boise BLM

##### Southwest Idaho / Southeast Oregon...

Zone 636 - Portion of the Burns BLM that lies south of Highway 20.

Zone 637 - Vale BLM

Zone 408 - Boise BLM (except the extreme northern portion)

A map delineating the area and zone configuration is included in the appendix.

## V. SCHEDULE OF PRODUCTS

<u>Product:</u>	<u>Issuance time:</u>
Morning forecast	0900
NFDRS trends forecast	1545
Afternoon forecast	1600
NFDRS trend forecast - Burns BLM	1630
Fire Weather Watch / Red Flag Warnings	When criteria is met
Spot forecasts	Upon request

The internet briefing will be held at 0930 MDT.

## VI. WEATHER EVENTS THAT INDICATE RED FLAG CONDITIONS:

High to extreme fire danger and dry fuels must exist in combination with these weather events.

1. Scattered “dry” thunderstorm activity - “dry” means that thunderstorms will produce little or no measurable precipitation but a considerable amount of lightning. Isolated dry lightning is not enough to warrant a Red Flag.
2. The occurrence of lightning after an extremely dry period. Often this means that the thunderstorms will “initially” be dry.
3. The passage of a cold front which will result in sustained winds of 20 MPH or more, gusty, of a changeable nature, and accompanied by low humidities (i.e. less than 15 percent).
4. In the judgement of the forecaster, weather conditions and fire danger will combine to create a critical fire control situation, such as the combination of long term drought, very low humidities and high Haines indices of 5 or 6.
5. For Oregon Zones 636 a Relative Humidity vs wind matrix was developed and used last year. This matrix is now extended into Oregon Zone 637.

### SUSTAINED 20 ft WIND OVER WIDESPREAD AREA (10 MINUTE AVERAGE IN MPH)

	15	20	25	30
25				
20				W
15			W	W
10		W	W	W
RH(%)				

Work continues to modify these Red Flag criteria. Additional criteria may include live fuel moisture, 1000 hr fuel moisture and Energy Release Component (ERC) threshold values.

## VII. FIRE WEATHER OBSERVATIONS:

There is a total of 33 fire weather observations in the Boise fire weather district. Of these, 6 are manual NFDRS stations, 26 are RAWS (Remote Automated Weather Systems), and one is an NWS station.

## VIII. INTERNET ACCESS:

The Boise National Weather Service has a wide array of fire weather information located on the homepage. The address is: <http://www.boi.noaa.gov/fwv.htm>

<u>STATION</u>	<u>STN #</u>	<u>RAWS ID</u>	<u>COUNTY</u>	<u>ST</u>	<u>AGENCY</u>	<u>LOCATION</u>	<u>SEC</u>	<u>TWP</u>	<u>RNG</u>	<u>ELEV</u>
<b><u>ZONE 401</u></b>										
<u>HORSE MTN</u>	<u>101103</u>	<u>MANUAL</u>	<u>ADAMS</u>	<u>ID</u>	<u>PAYETTE NF</u>	<u>45:07N 116:40W</u>	<u>26</u>	<u>21N</u>	<u>3W</u>	<u>6888</u>
<u>MC CALL</u>	<u>101209</u>	<u>MANUAL</u>	<u>VALLEY</u>	<u>ID</u>	<u>PAYETTE NF</u>	<u>44:54N 116:07W</u>	<u>8</u>	<u>18N</u>	<u>3E</u>	<u>5028</u>
<u>SKI HILL</u>	<u>101223</u>	<u>325E554C</u>	<u>VALLEY</u>	<u>ID</u>	<u>PAYETTE NF</u>	<u>45:11N 116:09W</u>	<u>35</u>	<u>19N</u>	<u>2E</u>	<u>5300</u>
<u>SNAKE RIVER</u>	<u>101109</u>	<u>325E8324</u>	<u>ADAMS</u>	<u>ID</u>	<u>PAYETTE NF</u>	<u>45:03N 116:43W</u>	<u>5</u>	<u>20N</u>	<u>3W</u>	<u>3500</u>
<u>WEISER RIVER</u>	<u>101108</u>	<u>325E60D6</u>	<u>ADAMS</u>	<u>ID</u>	<u>PAYETTE NF</u>	<u>44:30N 116:16W</u>	<u>35</u>	<u>18N</u>	<u>1W</u>	<u>3900</u>

<u>STATION</u>	<u>STN #</u>	<u>RAWS ID</u>	<u>COUNTY</u>	<u>ST</u>	<u>AGENCY</u>	<u>LOCATION</u>	<u>SEC</u>	<u>TWP</u>	<u>RNG</u>	<u>ELEV</u>
<b><u>ZONE 402</u></b>										
<u>CAREY DOME</u>	<u>101004</u>	<u>MANUAL</u>	<u>IDAHO</u>	<u>ID</u>	<u>PAYETTE NF</u>	<u>45:24N 115:54W</u>	<u>24</u>	<u>24N</u>	<u>4E</u>	<u>7681</u>
<u>LODGEPOLE</u>	<u>101044</u>	<u>325E9052</u>	<u>IDAHO</u>	<u>ID</u>	<u>PAYETTE NF</u>	<u>45:22N 115:10W</u>	<u>35</u>	<u>24N</u>	<u>10E</u>	<u>5800</u>
<u>TEAPOT</u>	<u>101220</u>	<u>325E73A0</u>	<u>VALLEY</u>	<u>ID</u>	<u>PAYETTE NF</u>	<u>44:54N 115:44W</u>	<u>16</u>	<u>18N</u>	<u>6E</u>	<u>5152</u>

<u>STATION</u>	<u>STN #</u>	<u>RAWS ID</u>	<u>COUNTY</u>	<u>ST</u>	<u>AGENCY</u>	<u>LOCATION</u>	<u>SEC</u>	<u>TWP</u>	<u>RNG</u>	<u>ELEV</u>
<b><u>ZONE 403</u></b>										
<u>BEARSKIN</u>	<u>101221</u>	<u>3241D254</u>	<u>VALLEY</u>	<u>ID</u>	<u>BOISE NF</u>	<u>44:23N 115:31W</u>	<u>16</u>	<u>12N</u>	<u>8E</u>	<u>7113</u>
<u>PINE CREEK</u>	<u>101222</u>	<u>3241DC86</u>	<u>VALLEY</u>	<u>ID</u>	<u>BOISE NF</u>	<u>44:14N 116:11W</u>	<u>34</u>	<u>11N</u>	<u>2E</u>	<u>5600</u>
<u>LTL ANDERSON</u>	<u>101710</u>	<u>326BE772</u>	<u>BOISE</u>	<u>ID</u>	<u>BOISE NF</u>	<u>44:05N 115:52W</u>	<u>28</u>	<u>9N</u>	<u>5E</u>	<u>4560</u>

<u>STATION</u>	<u>STN #</u>	<u>RAWS ID</u>	<u>COUNTY</u>	<u>ST</u>	<u>AGENCY</u>	<u>LOCATION</u>	<u>SEC</u>	<u>TWP</u>	<u>RNG</u>	<u>ELEV</u>
<u>ZONE 404</u>										
<u>DEAD INDIAN RIDGE</u>	<u>101402</u>	<u>3250B2D6</u>	<u>WASHINGTON</u>	<u>ID</u>	<u>BOISE BLM</u>	<u>44:19N 117:10W</u>	<u>3</u>	<u>11N</u>	<u>7W</u>	<u>3570</u>
<u>TOWN CREEK</u>	<u>101708</u>	<u>3241CFF0</u>	<u>BOISE</u>	<u>ID</u>	<u>BOISE NF</u>	<u>43:56N 115:55W</u>	<u>18</u>	<u>7N</u>	<u>5E</u>	<u>4500</u>

<u>STATION</u>	<u>STN #</u>	<u>RAWS ID</u>	<u>COUNTY</u>	<u>ST</u>	<u>AGENCY</u>	<u>LOCATION</u>	<u>SEC</u>	<u>TWP</u>	<u>RNG</u>	<u>ELEV</u>
<u>ZONE 408</u>										
<u>BOISE (WFO)</u>	<u>102601</u>	<u>NWS</u>	<u>ADA</u>	<u>ID</u>	<u>BOISE NWS</u>	<u>43:34N 116:13W</u>	<u>28</u>	<u>3N</u>	<u>2E</u>	<u>2838</u>
<u>BRACE FLATS</u>	<u>103207</u>	<u>325034C2</u>	<u>OWYHEE</u>	<u>ID</u>	<u>BOISE BLM</u>	<u>42:21N 116:42W</u>	<u>34</u>	<u>12S</u>	<u>3W</u>	<u>4900</u>
<u>HORSE BUTTE</u>	<u>103205</u>	<u>32513638</u>	<u>OWYHEE</u>	<u>ID</u>	<u>BOISE BLM</u>	<u>42:25N 115:14W</u>	<u>6</u>	<u>9S</u>	<u>10E</u>	<u>5000</u>
<u>MOUNTAIN HOME</u>	<u>102709</u>	<u>MANUAL</u>	<u>ELMORE</u>	<u>ID</u>	<u>BOISE BLM</u>	<u>43:03N 115:52W</u>	<u>28</u>	<u>4S</u>	<u>5E</u>	<u>3350</u>
<u>POLE CREEK</u>	<u>103210</u>	<u>3251B02C</u>	<u>OWYHEE</u>	<u>ID</u>	<u>BOISE BLM</u>	<u>42:09N 115:47W</u>	<u>5</u>	<u>16S</u>	<u>6E</u>	<u>5660</u>
<u>TRIANGLE</u>	<u>103208</u>	<u>32523136</u>	<u>OWYHEE</u>	<u>ID</u>	<u>BOISE BLM</u>	<u>42:49N 116:36W</u>	<u>16</u>	<u>7S</u>	<u>2W</u>	<u>5270</u>
<u>TWIN BUTTE</u>	<u>103209</u>	<u>3252B722</u>	<u>OWYHEE</u>	<u>ID</u>	<u>BOISE BLM</u>	<u>42:31N 115:09W</u>	<u>32</u>	<u>8S</u>	<u>11E</u>	<u>3330</u>

<u>STATION</u>	<u>STN #</u>	<u>RAWS ID</u>	<u>COUNTY</u>	<u>ST</u>	<u>AGENCY</u>	<u>LOCATION</u>	<u>SEC</u>	<u>TWP</u>	<u>RNG</u>	<u>ELEV</u>
<u>ZONE 636</u>										
<u>BALD MTN</u>	<u>353522</u>	<u>325282B8</u>	<u>HARNEY</u>	<u>OR</u>	<u>BURNS BLM</u>	<u>43:33N 118:24W</u>	<u>22</u>	<u>23S</u>	<u>35E</u>	<u>5480</u>
<u>BASQUE HILLS</u>	<u>353520</u>	<u>3250A1A0</u>	<u>HARNEY</u>	<u>OR</u>	<u>BURNS BLM</u>	<u>42:15N 118:59W</u>	<u>21</u>	<u>38S</u>	<u>32E</u>	<u>5080</u>
<u>FISH FIN RIM</u>	<u>353516</u>	<u>325D842A</u>	<u>HARNEY</u>	<u>OR</u>	<u>BURNS BLM</u>	<u>42:28N 119:10W</u>	<u>10</u>	<u>36S</u>	<u>30E</u>	<u>4900</u>
<u>MOON HILL</u>	<u>353526</u>	<u>326543E2</u>	<u>HARNEY</u>	<u>OR</u>	<u>BURNS BLM</u>	<u>42:51N 118:40W</u>	<u>26</u>	<u>31S</u>	<u>32E</u>	<u>6100</u>
<u>P HILL</u>	<u>353521</u>	<u>32550698</u>	<u>HARNEY</u>	<u>OR</u>	<u>BURNS BLM</u>	<u>42:49N 118:56W</u>	<u>3</u>	<u>32S</u>	<u>32E</u>	<u>4860</u>
<u>RIDDLE MTN</u>	<u>353511</u>	<u>3253C348</u>	<u>HARNEY</u>	<u>OR</u>	<u>BURNS BLM</u>	<u>43:06N 118:29W</u>	<u>35</u>	<u>28S</u>	<u>34E</u>	<u>6352</u>
<u>WAGONTIRE</u>	<u>353512</u>	<u>3256E264</u>	<u>HARNEY</u>	<u>OR</u>	<u>BURNS BLM</u>	<u>43:20N 119:52W</u>	<u>6</u>	<u>26S</u>	<u>24E</u>	<u>6420</u>

<u>STATION</u>	<u>STN #</u>	<u>RAWS ID</u>	<u>COUNTY</u>	<u>ST</u>	<u>AGENCY</u>	<u>LOCATION</u>	<u>SEC</u>	<u>TWP</u>	<u>RNG</u>	<u>ELEV</u>
<u>ZONE 637</u>										
<u>GRASSY MTN</u>	<u>353612</u>	<u>32443666</u>	<u>MALHEUR</u>	<u>OR</u>	<u>VALE BLM</u>	<u>42:38N 117:25W</u>	<u>12</u>	<u>34S</u>	<u>43E</u>	<u>4000</u>
<u>KELSEY BUTTE</u>	<u>353613</u>	<u>3279707A</u>	<u>MALHEUR</u>	<u>OR</u>	<u>VALE BLM</u>	<u>43:55N 117:58W</u>	<u>19</u>	<u>19S</u>	<u>39E</u>	<u>5200</u>
<u>OWYHEE RIDGE</u>	<u>353614</u>	<u>32799388</u>	<u>MALHEUR</u>	<u>OR</u>	<u>VALE BLM</u>	<u>43:21N 117:12W</u>	<u>9</u>	<u>23S</u>	<u>45E</u>	<u>4400</u>
<u>RED BUTTE</u>	<u>353616</u>	<u>325DB1B0</u>	<u>MALHEUR</u>	<u>OR</u>	<u>VALE BLM</u>	<u>43:32N 117:48W</u>	<u>27</u>	<u>23S</u>	<u>40E</u>	<u>4460</u>
<u>VALE</u>	<u>353603</u>	<u>MANUAL</u>	<u>MALHEUR</u>	<u>OR</u>	<u>VALE BLM</u>	<u>43:58N 117:18W</u>	<u>32</u>	<u>18S</u>	<u>45E</u>	<u>2250</u>

## Boise Fire Weather Zone Map

